DOCUMENT RESUME

ED 219 077 IR 010 303

AUTHOR Mason, Thomas R.; And Others
TITLE Facilities Program Plan for the Libraries of the University of Missouri-Columbia.
INSTITUTION Missouri Univ., Columbia. Office of Institutional Research.
PUB DATE Dec 81
NOTE 153p.; Prepared by a team of consultants--Sasaki Associates, Inc., Mackey & Associates, MIRA Incorporated and Louis E. Martin.

EDRS PRICE MF01/PC07 Plus Postage.
DESCRIPTORS *Capital Outlay (for Fixed Assets); College Libraries; *Facility Planning; *Facility Requirements; Formative Evaluation; *Library Facilities; Library Planning; *Long Range Planning; Master Plans; *Prediction; Tables (Data)
IDENTIFIERS University of Missouri Columbia

ABSTRACT

The product of a combined consultant approach to library evaluation, this report provides an intensive, detailed evaluation of current library conditions, comparison with national norms and peer university libraries, and projections of alternative options for collection growth, user facilities, and staff development translated into building facilities requirements over the next 20 years. The team, composed of a planning and design firm, a program planning and information research firm, architectural planners, and a university library consultant, provides a series of general findings followed by a comparison with 27 other university libraries for planning perspective. Projections to 20 years are made and converted to assignable floor space for users, staff, and services. A final chapter deals with a capital staging plan to finance new construction and renovation. Appendices provide nine tables on the evaluation of current conditions, seven on comparisons with Association of Research Libraries peers, and 19 of projections for University of Missouri-Columbia libraries; floor plans of existing libraries; and a campus map showing existing and potential libraries. More than 30 references are listed. (RAA)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

- This document has been reproduced as received from the person or organization originating it.
  Minor changes have been made to improve reproduction quality.
- Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

ED219077

Facilities Program Plan for the Libraries of the University of Missouri - Columbia

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Thomas R. Mason

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

IR010303

Consultants: Sasaki Associates, Inc./Mackey & Associates/MIRA Incorporated/Louis E. Martin

UNIVERSITY OF MISSOURI-COLUMBIA

Institutional Research and Planning

111 Jesse Hall
Columbia, Missouri 65211
Telephone (314) 882-7594

January 25, 1982

To: Chancellor Uehling
Provost Bunn
Vice Chancellor Frijters
Vice Chancellor Moore
Mr. Robert Smith
Mr. Mike Haggans

From: Duane Stucky

I am submitting the final report on the UMC Libraries from Sasaki/Mackey/MIRA/Martin. A summary is attached.

The principal conclusions of the report suggest the following:

1. The Library Storage project should be reexamined.

2. The State Historical Society and Ellis Auditorium should be relocated if possible.

3. A major addition to and renovation of Ellis Library should be planned for a 20 year capacity that would add 185,000 to 230,000 gross square feet.

4. The Law Library should be planned for approximately 50,000 assignable square feet and a capacity of 375,000 volumes.

5. The Health Sciences Library should be planned for approximately 50,000 assignable square feet and 350,000 volumes.

6. The Library Storage facility should be replaced with high density open-access stacks in an Ellis Renovation/Expansion.

I hope you find the report helpful.

Attachment

an equal opportunity institution

Libraries of the University of Missouri-Columbia:

LIBRARY EVALUATION AND FACILITIES PROGRAM PLAN

Prepared by
Thomas R. Mason, MIRA Incorporated
with
J.E. Robinson, Sasaki Associates
Eugene J. Mackey, Mackey & Associates
and
Louis E. Martin
Library Consultant
Cornell University Librarian

THE SASAKI/MACKEY/MIRA/MARTIN TEAM

December 1981

LIBRARIES OF THE UNIVERSITY OF MISSOURI-COLUMBIA:
Evaluation and Facilities Program Plan

CONTENTS

Topic	Page
SUMMARY of the Library Study by the Sasaki/Mackey/MIRA/Martin Team	4
COMMENTS on the Final Report by Louis E. Martin, Consulting Librarian	6
ACKNOWLEDGEMENTS	10
CHAPTER 1: AN EVALUATION OF CURRENT CONDITIONS	
Summary of Chapter 1 Evaluation	
Findings and Evaluation	13
Collections	13
Reader Facilities	15
Library Staffing	16
Library Building Facilities	17
Observations of Louis E. Martin, July and August Site Visits	20
Library Development in the Campus-Wide Context	23
Library Location and Design Considerations Memorandum by J.E. Robinson	25
Options for Staged Library Development	26
CHAPTER 2 COMPARISON AND PROJECTIONS OF UMC LIBRARY DEVELOPMENT	
SECTION A - Comparison with Peer Libraries	28
Summary of Comparative Findings	31
SECTION B - Projection of UMC Library Development	33
Collection Growth Options	34
Reader Station Options	36
Projected Library Staffing	38
CHAPTER 3 LIBRARY FACILITIES PROJECTIONS	40
SECTION A - Ellis Library Facilities	40
Ellis Stack Area Projections	41
Ellis User Area Projections	42
Projected Staff/Service Areas in Ellis	43
Total Floor Area Projection Options for Ellis Library	44

CONTENTS (Continued)

SECTION B - Law Library Projections 45

SECTION C - Health Sciences Library Projections 47

SECTION D - Tentative Projections:
State Historical Society of Missouri 50

CHAPTER 4 CAPITAL DEVELOPMENT STAGING
FOR LIBRARY FACILITIES 55

LIST OF REFERENCES 58

APPENDICES

APPENDIX 1 List of Tables:

Table 1 Summary of Existing Library Space
Under Library Administration
Departmental and Residence Halls Reading/Study Rooms
Table 2 Summary of Existing Library Holdings
Table 3 Reader Stations Available in UMC Libraries in 1981
Table 4 Numbers of Library Staff FTE Positions
Table 5 Library Expenditures by Type Expense
Table 6 Minimum Size of Desirable Library Collection
Table 7 Comparison of Actual Annual Library Acquisition Rate
with Normative Rates
Table 8 Alternative Reader Station Norms
Applied to Fall 1980 UMC FTE Students
Table 9 Application of Washington State Council for Postsecondary
Education Library Staffing Formula

APPENDIX 2.1 List of Tables: Comparisons with ARL Peers

Table 10 - 1978-79 Comparing 3.1% Average Acquisitions
Table 11 - 1979-80 Comparing 3.13% Average Acquisitions
Table 12A - 1978-79 Comparing 5% Acquisition Rate
Table 12B - 1979-80 Comparing 5% Acquisition Rate
Table 13 - Actual v. Normative Acquisition Rates
Table 14 - ARL Peer Libraries Ranked by Size
Table 15 - Summary ARL Peer Comparison Groups

APPENDIX 2.2 Projections of UMC Libraries

Table 16 Combined Library Projections
Collection Growth Options
Table 17 Combined Reader Projections
Table 18 Library Staffing Options

CONTENTS (Continued)

APPENDIX 3 FACILITIES PROJECTIONS:

ELLIS LIBRARY

Table E-1 Stack Area Projections
Table E-2 User Area Projections
Table E-3 Staff Office/Service Areas
Table E-4 Summary of Projections

LAW LIBRARY

Table L-1 Program Plan Alternatives
Table L-2 Projected Reader Facilities
Table L-3 Projected Collections Areas
Table L-4 Law Library Staff Projected
Table L-5 STAFF Office/Service Areas and Summary of Projections

HEALTH SCIENCES LIBRARY

Table HS-1 Acquisitions/Stack Options
Table HS-2 User Demand Alternatives
Table HS-3 Staff Office/Work Stations
Table HS-4 Summary of Floor Area Options

STATE HISTORICAL SOCIETY OF MISSOURI

Table H-1 Projections of Collections Floor Area Requirements
Table H-2 Projections of Reader/User Stations and Floor Areas
Table H-3 Projections of Staff Office/work Station Areas

APPENDIX 4.1 FLOOR PLANS OF EXISTING LIBRARIES

APPENDIX 4.2 CAMPUS MAP SHOWING EXISTING AND POTENTIAL LIBRARIES

Libraries of the University of Missouri-Columbia
Library Evaluation and Facilities Program Plan

S U M M A R Y

This study of the Libraries of the University of Missouri-Columbia was performed in 1981 as part of the comprehensive planning process initiated by Chancellor Barbara S. Uehling and her staff. The planning consultants selected are a combined team from Sasaki Associates, Inc., Watertown, Massachusetts, planning and design firm; Mackey and Associates, St. Louis architects-planners; and MIRA Incorporated, Minneapolis program planning and information research firm.

Early in the planning process, the immediate and long-range importance of library resources and facilities emerged as a critical priority for in-depth study. The Sasaki/Mackay/MIRA team expanded its extensive library planning experience by inviting Louis E. Martin, University Librarian at Cornell, to join the evaluation and facilities program planning study of UMC libraries.

The report of the consultants is an intensive, detailed evaluation of current library conditions; comparison with national norms and peer university libraries; and projections of alternative options of collection growth, user facilities, and staff development translated into building facilities requirements over the next 20 years.

The consultants' evaluation of current library conditions, in terms of accepted norms, and the projections show the following:

1. Capacity to house books and other library materials is now acutely oversaturated.

2. Reader facilities are seriously deficient and are being further displaced to house materials.

3. Library staff work space is inadequate, scattered, and poorly arranged.

4. Building facilities are seriously deficient in size and need extensive functional remodeling and reorganization.

5. Ellis Library is ideally located in the heart of the campus for its central library, with excellent expansion space to the south. To adequately house collections, users, and staff today, however, Ellis is deficient by 100,000 square feet. To allow for essential growth, it will need an additional 100,000 square feet by 1990.

6. To function as a modern, modular library, all of the space in Ellis should be assigned to University library use, relocating Ellis Auditorium and the State Historical Society of Missouri.

7. The proposal for a "Library Storage" facility of closed stacks as part of a new Health Sciences Library should be replaced by the much more urgent need for an addition to Ellis.

8. Proceed with construction of a new Health Sciences Library and proceed with construction of a Law Library as part of the new Law School.

Comparison is made (Chapter 2, Section A) with 27 peer university libraries, including Big 8 and Big 10 institutions. In collection size, UMC is close to Kansas and Colorado at the top of the Big 8. UMC collections are half the size of the Big 10 leaders, Illinois, Michigan, Wisconsin, Ohio State, Minnesota, and Indiana. Annual acquisition rates at UMC, now just over 50,000 net volumes added, are at the lower end of the peer libraries. The consultants recommend that acquisitions should be 75,000 per year to adequately keep up.

Current economic conditions, however, place pessimistic short-run prospects on desired library growth. At current construction costs, space required for each volume added is worth over $6 in capital investment to be added to the $20-$30 per volume in acquisition costs.

The longer-range planning perspective — 5 to 20 years — requires the vision that the libraries of the University of Missouri-Columbia will be expanded and remodeled. Projections to 20 years are made in Chapter 2, Section B, using alternative options of collection growth and user facilities. These are calculated in detail for Ellis, Law, and Health Sciences libraries, with more general estimates for the smaller branch libraries.

In Chapter 3, these projection options are converted to assignable floor areas of building space for collections, users, and staff and service space. For the new Law Library and Health Sciences Library, the recommended size of each is approximately 50,000 assignable square feet (60,000-65,000 gross square feet). Two additions are proposed to Ellis Library — about 100,000 square feet as soon as possible and another 100,000 square feet around 1990.

Chapter 4 outlines a proposed staging plan of capital development for Columbia campus libraries. In addition to construction of the new Law and Health Sciences libraries, the redevelopment of Ellis Library is proposed in several stages. Early action is proposed to convert Ellis Auditorium for use as a reading room-reserve book library (possibly open 24-hours a day). Finding a way of relocating the State Historical Society of Missouri is urged by the consultants, either in another building on campus or in the proposed addition to Ellis enlarged by 45,000 square feet for the Society. The completion of the early addition to Ellis would be followed by extensive staged remodeling to make it an efficient, modern central library.

The capital construction costs of these library projects in the next ten years is substantial. The consultants strongly advocate that this capital investment in the major libraries of the University of Missouri-Columbia is essential to maintain the basic quality of its human capital development in education, research, and service.

Libraries of the University of Missouri-Columbia
Library Evaluation and Facilities Program Plan

Comments on the Final Report by
LOUIS E. MARTIN
Consulting Librarian
University Librarian, Cornell University

The comments in this memorandum are based on my review of the final report of the "Library Evaluation and Facilities Program Plan" for the University of Missouri-Columbia, December 1981. My comments are grouped under headings that represent the issues with which I am primarily concerned.

Planning Assumptions and Process

It is clear that an acceptable and effective plan for library development at the University of Missouri-Columbia is an imperative, both to achieve a useful library system for the faculty and students and to put into place the cornerstone of a sound plan for campuswide facilities development.

This report does meet its objective of initiating a "well-documented plan for staged library development over the coming decade." Staged development certainly is called for in this time of financial constraints. The stages, however, must be delineated clearly and their relationships understood if the objectives of an integrated, efficient University library are to be realized.

Further, a 20-year plan with checkpoints at five- and ten-year intervals is good planning methodology. It forces long-range planning goals to be considered for users, collections, staff, and space, while it recognizes the necessity of continual reevaluation of intermediate and long-range goals in light of changing circumstances.

A word about the peer university library comparisons (Chapter 2, Section A), which form an important part of this report: The necessity of such comparisons is undeniable. University administrators are skeptical, and properly so, of theoretical ideals. But comparing University Library A with University Library B can be misleading. Institutions differ markedly in spite of their many similarities. With that said, it appears the comparisons in this report, based on a group of 27 state-supported university libraries holding membership in the Association of Research Libraries, are relevant, useful, and done in this study with care.

The same may be said of the formulas used to illustrate collection and staffing levels and facilities needs. Although the Clapp-Jordan study (cited in Chapter 1, p. 2, and Table 6) was never intended to be a set of formulas, its numbers have proved useful approximations of minimal collections needed to support faculty and student bodies of certain magnitudes and programs of varying degrees of breadth and depth. The numbers, however, as this report is careful to point out, are only average approximations and may not speak to a specific academic situation with any precision.

The Washington State formulas are more comprehensive and based, to some extent, on concrete academic program structures. It is normal practice to accord them more credibility. While the "entitlements" aspect of the formulas may represent at times unapproachable ideals, the "working averages" or budget allowances are quite realistic. (See Chapter 1, pages 3-4, 5-6, Tables 6, 7, and 9.)

In sum, the use of comparisons and formulas further the objectives of the study by comparing normative values of collection and staff sizes and acquisition rates. They are put forward with care; reliance on them should exhibit the same prudence. The working decisions on these library planning goals must emerge from response to the specific needs of the teaching and research programs of the University of Missouri-Columbia. These are shaped by the library staff in consultation with the faculties of the various programs, in the context of the missions of the University, and, inevitably, with the constraints of financial resources and priorities.

Finally, we agree that the printed bound volume, monograph, or serial will continue to be the dominant means of purveying and storing information in university libraries for the next score of years. The electronic age will modify its contents and format appreciably but will not replace the printed medium for some time.

Findings and Evaluations of Current Conditions

There can be no argument with the findings and evaluations of the current situation relative to collection growth, reader facilities, staffing, and building facilities. There must be a commitment to improve all four as expeditiously as possible, in spite of the financial problems confronting the State and the University.

Collection growth has been nowhere near minimum essential levels, regardless of the measure used. The 32,000 volumes added in 1979-80 and the 52,000 added in 1980-81 do not begin to ensure adequate collections for UMC programs. While a growth-rate of five percent overall may be out of reach, the Washington State budget formula goal of 76,000 volumes added per year should be seen as a MINIMUM target. The options in the report for system growth of 40,000 and 55,000 volumes per year may be implemented only with the recognition that the University will fall ever further from its goal of a respectable university research library system.

Reader facilities also are sadly lacking now and will get worse if books have to continue to preempt study and research space because of acutely deficient stack space. Although norms for numbers of reader facilities are as difficult to "prove" as other planning norms, a doubling of the present reader stations is a reasonable goal. The improvement in the number of faculty studies from the present 46 is a clear priority for a university research library. The recommended number of 236 faculty library studies is reasonable.

The library staffing situation should be reviewed as critical, because of the need to fill a number of key vacancies very soon, including those of Director and Associate Director of Libraries. Good people in these positions are essential to successful library planning.

Staff size is inadequate. The recommended growth pattern over the next 20 years to a total staff of 360 is reasonable, especially when one considers that the support staff total includes hourly-wage student assistants. The recommended mix of two support staff for one professional staff position is debatable. Present trends in university libraries are more toward the higher ratio of 3-to-1 support-to-professional staff.

The present library building facilities are, quite simply, grossly inadequate for collections, readers, and staff. The figures used in the report to project future needs are, if anything, conservative.

Ellis Library

There is complete agreement among the consultants that "the key to great improvement of Library resources at the University of Missouri-Columbia...is a major expansion and complete remodeling and renovation of Ellis Library" (p. 46). The site is excellent and permits necessary expansion. It is eminently suited to continue to be the center of the University Library System. The centrality of the Ellis building and its site must be the focus of library planning.

High-Density Stack Shelving

One of the more critical recommendations in the report, regarding relief for the overly saturated bookstacks, is that current plans for a central, closed-access, multi-campus "library storage" facility added to the proposed Health Sciences Library should be abandoned in favor of developing high-density shelving areas as integral parts of the major library units, Ellis, Health Sciences, and Law.

This would be accomplished by narrowing the stack aisles and increasing the number of shelves per section, tactics that have proved workable and effective in other libraries. This arrangement would obviate the need for a staffed "storage" facility and would result in increased convenience at lower cost in use of the collections. The proposed density of about 35 volumes per square foot appears to be realistic.

This proposed plan, if implemented, would postpone the need for a large library storage facility for some time, and it would serve faculty, students, and staff well. It would not negate the FUTURE possible value of multi-campus library storage facility in a more remote location when the campus collection size approaches 4,000,000 volumes, when more rarely used materials will be available that merit relatively inactive storage. The current UMC collection size (and certainly those of the newer campuses) has much greater need for active stack space directly accessible to the users.

The State Historical Society of Missouri

If the Ellis Library is to serve as the central library facility for the University, the Historical Society will need to be relocated. The amount of space it now occupies and its location are essential to the proper functioning of the main Library. If at all possible, the Society's new space should be close by, since its collections and services are important to the University libraries and their users.

Law and Health Sciences Libraries

The need for new library quarters for Law and Health Sciences is indisputable and, happily, is being addressed with high University priority. Given the conditions of those Libraries that I observed, I can only urge haste toward their construction.

In conclusion, I strongly support the findings of my consulting colleages and recommend that the University of Missouri and the State give these kinds of Library capital development the highest priority. They are vital to the continued distinction of the University's academic and research programs — imperative if their qualities are to grow on scholarly merit.

Louis E. Martin
Ithaca, New York
December 30, 1981

Library Evaluation and Facilities Program Plan

A C K N O W L E D G E M E N T S

As principal investigator and author of this report, I want to express my appreciation to its many contributors. My colleagues on the Sasaki/Mackey/MIRA/Martin team of consultants have provided guidance, insight, and their thorough knowledge of college and university library planning. J.E. Robinson, Director of Institutional Services, Sasaki Associates, kept the essential overview of the whole campus planning process and the vital role of the library at its heart. He reminded me often that I had offered a solution before defining the problem. Eugene J. Mackey of Mackey and Associates provided the depth of his previous work in the 1980 Alternative Library Site Study for the Columbia campus and extensive planning and architectural work with other libraries. The solution of proposing the use of higher density open stacks integrated with Ellis, Law, and Health Sciences library emerged from his work. Louis E. Martin, University Librarian of Cornell University, our professional librarian advisor and critic, kept the essential perspective of one who must make the libraries work effectively as a library administrator.

The staff of the UMC Libraries were vital sources. John H. Gribbin, Director of Libraries, provided full understanding of the current crisis of deficient space as well as the qualities of UMC Libraries. Additional depth of understanding and detailed information were provided by Dean Schmidt, Director of the Health Sciences Library; Susan D. Csaki, Law Librarian; Robert A. Almony Jr., Assistant Director of Libraries; and Mary Ryan, head reference librarian. Our meeting with Richard S. Brownlee, Director of The State Historical Society, provided a tentative beginning toward estimating the society's future facilities contained in Chapter 3 and emphasized the importance of the separate autonomy of the Society. Before going to the University of Mississippi, former Associate Director of Libraries, Grey Cole, penetrated the issue when he commented that if the library is the heart of the UMC campus, it is having a coronary!

The clear expectation of achieving effective planning of Chancellor Barbara Uehling set the tone of the need for depth and thoroughness in this study. Provost Ronald Bunn called for the comparison with peer libraries as essential to his judgmental perspective and kept the facts of severely limited resources before us as the challenge to the validity of our recommendations. Much help has come from Dr. Duane Stucky, Deputy to the Chancellor, Director of Institutional Research, and the staff of his Office of Planning and Institutional Research. The assistance of Jeanne M. Wait, senior secretary in that office, was vital to this study. Michael Haggans, Director of Planning and Development, University of Missouri Central Administration, helped give clarity of form as well as sustained support.

Thomas R. Mason
MIRA Incorporated
December 30, 1981

Libraries of the University of Missouri-Columbia:

S U M M A R Y
Chapter 1 - AN EVALUATION OF CURRENT CONDITIONS

The need for library development at the University of Missouri-Columbia clearly is of the highest order. Along with the construction of a new Law School with its critically important library and a new Health Sciences Library, the need for major improvement and expansion of the central library and most branch libraries is starkly evident.

In terms of nationally used norms and comparison with peer university libraries, the Columbia Campus libraries show major deficiencies and acute overcrowding. This assessment of the current conditions of libraries at UMC shows the need to:

1. Increase library shelving space substantially to reasonably house the current overcrowded collection, plus provide for at least ten years, preferably 20 years, of growth;

2. Increase library reader stations and user facilities to accommodate at least 5,600 users, compared with 2,800 now;

3. Provide up to 238 faculty library studies compared to the minimum 48 now available.

4. Substantially reorganize and remodel existing library facilities.

These findings of need for library expansion, regrouping, and renovation emerge from evaluation by the consultants of CURRENT 1980-81 library conditions at the University of Missouri-Columbia conducted in July and August, 1981. The findings and evaluation of current conditions, summarized in Chapter 1, provide the foundation for the projections of library development, programming of future facilities requirements, and assessment of alternative approaches described in subsequent chapters of this report.

The objective of this Library Study is to initiate a clear justification and well-documented plan for staged library development over the coming decade. This report can only be the beginning of the detailed planning process: It seeks to provide a framework for continued University planning and capital funding decisions in the coming year.

Libraries of the University of Missouri-Columbia: Evaluation and Facilities Program Plan

Thomas R. Mason
with
J.E. Robinson, Eugene J. Mackey, and
Louis E. Martin
December 1981

Chapter 1
AN EVALUATION OF CURRENT CONDITIONS

The condition of library facilities on the Columbia Campus of the University of Missouri is extremely serious.

Many studies and reports over the past five years have identified various aspects of the deficiencies of library facilities. What now appears to be needed is an integrated plan for renewal, redevelopment, and staged expansion of library facilities.

This judgment is based on the findings of the planning consultants in the information research and evaluation phase of this study, summarized in Chapter 1. It is affirmed by the comparison of libraries at UMC with 26 peer university libraries, described in Chapter 2, Section A, and the projections of library development options summarized in Chapter 2, Section B. The magnitudes of library space needs to house the projected development are summarized in Chapter 3. Preliminary staged capital development options are outlined in Chapter 4. These are subject to further decisionmaking and refinement by the University in the coming year.

This study initiates detailed planning for a staged program of library development toward resolving the problems of deficient and poor quality library facilities. The purpose of the study is to define rational options for library development in stages. This planning should lead to adequate, well-organized facilities that effectively house the resources and services of the Columbia core of the University of Missouri library system.

This chapter summarizes the initial informational findings about the Columbia Campus libraries and evaluates those findings in comparison with commonly used library planning criteria. The professional librarian's view of current conditions of UMC libraries follows, as observed by Library Consultant Louis E. Martin (University Librarian, Cornell University). Next, J.E. Robinson, campus planner of Sasaki Associates identifies the physical planning, locational, and design feasibility aspects of library development.

Appendix 1 contains tables, references, and existing floor plans with detailed information findings and evaluation calculations referred to in the text.

SUMMARY OF FINDINGS AND EVALUATION

The following items summarize the information findings and evaluation of the 1980-81 status of library resources and facilities under UMC Library administration:

Collections

1. FINDING: The UMC library system ended 1980-81 with 2,068,788 bound volumes (see appended Table 2).

EVALUATION: The "desirable" or "minimum" size of library resource collections for a research university such as the University of Missouri-Columbia is a complex problem of judgment. Various formulas have been developed that seek to measure the "minimum" collection size needed for a given mix of degree programs, student population, and faculty size. These formulas provide gross indicators of desirable magnitudes of collections, but their validity for a single institution is difficult to prove. Ideally, in-depth assessment would be made for each degree program discipline to determine the content of essential basic collections, specialized requirements, unique program dimensions, and the kinds of literature needed relative to current holdings. The complexities and costs of such detailed evaluation of specific disciplines are great. Yet the desire for some rational indicator of ADEQUACY of academic library collection size has led to a search for simpler formulas that reasonably reflect institutional program and size differences. Best known of these was published in 1965 by Verner W. Clapp and Robert T. Jordan, "Quantitative Criteria for Adequacy of Academic Library Collections" (see References, Appendix 1.2 of this report). Along with several refinements and adaptations, the Clapp-Jordan formula is a useful indicator of minimum desirable collection size, if not a certain demonstration of need.

If the Clapp-Jordan formula is applied to 1980-81 factors at the University of Missouri-Columbia, its minimum library collection should be 2,346,600 bound volumes — 300,000 volumes larger. If the adaptation of the Clapp-Jordan formula developed in the State of Washington is applied, UMC should have at least 2,487,800 volumes, over 400,000 additional volumes to adequately serve its undergraduate and graduate degree and research programs. Another adaptation of Clapp-Jordan is used by the Association of College and Research Libraries, "Standards for College Libraries" (1975) for liberal arts colleges and small universities granting fewer than 10 doctoral degrees per year. This ACRL formula applied to UMC results in a minimum collection of 2,595,000 volumes—500,000 more than the current collection. (See appended Table 6.)

The problem with these formulas is that they do not deal with the adequacy of content or size of collections in relation to specific fields or types of instruction and research unique to the programs of the University of Missouri-Columbia. The validity of the

overall collection size calculated from these formulas is subject to varied judgment, rarely accepted at face value by funding agencies or users of specific disciplinary collections. They are widely used as "normative" indicators, but require further evaluation.

In 1979 the Association of Research Libraries and the Association of College and Research Libraries issued its "Standards for University Libraries." This document does not provide a quantitative formula. The standard (8.1) on Collections is that they "shall be of sufficient size and scope to support the university's total instructional needs and to facilitate the university's research programs." The commentary includes the following:

> Attempts have been made to identify precise quantitative measures of adequate collection size and growth rates for a university library. No such formula has yet been developed which can be generally applied. At present, such formulas as exist can only yield approximations which indicate general level of need. If they are applied arbitrarily and mechanically, they can distort the realities of a given situation. Nevertheless, quantitative measures are increasingly important in guiding the qualitative judgment that must ultimately be applied to university libraries and their collections. One technique is the use of regression analysis to facilitate the comparison of similar libraries to one another; another of some general applicability is the "index of quality" developed by the American Council on Education for relating library collection size to graduate program quality.

2. FINDING: The comparison of collection sizes with 26 other peer university libraries, described in Chapter 2A, shows that among the Big-8 ARL university libraries in 1979-80, the University of Missouri-Columbia is second in size the the University of Kansas. Among the 27 institutions in the peer comparison, UMC ranks 10th in total bound volumes, but 20th in net volumes added in 1979-80.

3. FINDING: The net increase in volumes 1978-79 to 1979-80 was 32,000 volumes; 1979-80 to 1980-81 increase was just over 52,000 volumes in the UMC Libraries.

EVALUATION: A common norm for annual acquisitions is that they should be at a minimum rate of five per cent of the holdings to keep up with the rate of published knowledge growth. This is based on studies that show exponential growth of library collections doubling every 16 years, every 10 years in the sciences. The five percent normative annual growth rate means that UMC acquisitions in 1981-82 would be 103,500 volumes plus other materials, twice the 1980-81 rate, three times the 1979-80 rate (see appended Table 7).

EVALUATION: If the Washington State 1980 budget formula for acquisitions is applied to the UMC library collection, it should

have added at least 76,000 volumes during 1980-81, 50 per cent more. The maximum "entitlement" for acquisitions in the Washington formula would be over 128,000 volumes added in 1981-82 (see appended Table 7).

Again, there is no clear validation of an overall library growth rate, usually shaped over time through incremental budgeting in response to faculty requests for materials limited by current funding situations (and in recent years severely constrained by high inflation in library materials costs).

4. FINDING: The peer university library comparison in Chapter 2A shows that recent UMC net acquisition rates are at the lowest quartile of the 27 peers. UMC acquisitions were 5th in the Big-8 group (2.5% of collections compared with the Big-8 average of 3%), 21st among the comparison group (which averaged 3.13% acquisition rate).

5. FINDING: There is no place left to shelve books in the libraries of the University of Missouri-Columbia. Shelving is 90 per cent full.

EVALUATION: Normal library operations should not exceed 67 per cent of saturation to avoid costly recurrent reshelving. (Keyes Metcalf, the most widely accepted authority on library planning, says that shelves are FULL when the average reaches 86 per cent.)

6. FINDING: UMC libraries now average over 11 volumes per linear foot of shelving, with collections of 2,068,800 cramped in 187,854 linear feet of shelving.

EVALUATION: Most formulas on library planning use an average of six volumes per linear foot of shelving. High density compact storage assumes between 8 and 10 volumes per linear foot. By any criteria, UMC library stacks are saturated.

Reader Facilities

7. FINDING: The UMC libraries now have 2,676 reader stations, including 46 faculty study rooms. There are 1,764 reader stations in Ellis, 136 in the State Historical Society quarters, 776 in the branch libraries (see appended Table 3). Over 400 reader stations have been removed for book shelving in the past four years. Not directly inventoried, but estimated from room size, there are about 500 reader stations in departmental reading rooms and 1,000 in residence hall reading/study rooms. At most, all campus reader stations total 4,200.

The following evaluation findings are based on calculations shown in appended Table 8:

EVALUATION:(1) A common formula used by state coordinating agencies is that library reader stations should equal 25 per cent of the FTE students. That would require 5,500 reader stations at UMC.

EVALUATION:(2) If the reader capacity norm of the Association of College and Research Libraries for minimum of 33% of enrollment is

applied, UMC needs 7,300 reader stations.

EVALUATION:(3) With its current student FTE enrollment and mix by level of instruction applied to variable library reader station requirements (at 20% of lower division FTE, 30% of upper division FTE, 25-to-40% of graduate FTE varying with dependence of the field on library resources, and 75% of law FTE), UMC libraries should have about 5,600 reader stations.

EVALUATION:(4) If the Harvard formula is applied (37.5% of undergraduates, 90% of graduate students in social sciences and humanities, 50% of graduate students in the sciences), UMC qualifies for over 9,700 reader stations (44% of FTE students).

EVALUATION: A common allowance for faculty studies in libraries is 10 per cent of the full-time faculty. UMC would qualify for 236 faculty study rooms instead of the existing 46.

Library Staffing

8. FINDING: In 1980-81 UMC Libraries were budgeted for 58 professional staff positions, 119 support staff positions, and an estimated equivalent of 30 full-time hourly wage student assistant staff — 28% professional, 58% salaried support staff, and 14% hourly estimated full-time equivalent, or 72% support staff (see appended Table 4).

EVALUATION: The 1977 report of the University of Missouri Committee on Library resources found that UM libraries "reveal a mediocre meeting" of the standards of the American Association of College and Research Libaries. "The standard on which UM libraries do the poorest job is the one which grades how well a library meets the standard for size of staff based upon size and academic levels of student body and faculty, size of collection, and number of volumes processed in a year." Columbia Campus libraries rated 77% of the ACRL standard (graded low B), rated better than the other three U.M. campuses. To improve to B+ (90% of ACRL staffing standards), the UMC library staff would have to be at least 275 today, 70 more than budgeted in 1980-81.

EVALUATION: The Association of Research Libraries data indicate that most ARL libraries operate with two support staff to every one professional. UMC library staff has been strengthened since 1977, as the University administration has given priority to improving staff salaries and qualities. The proportion of support staff to professional staff at UMC is 3-to-1 on an FTE basis. This ratio implies an efficient use of professional staff with adequate support staff; any higher ratio of support to professional staff possibly could spread professional staff too thinly.

EVALUATION: If the formula criteria of the Washington Council on Postsecondary Education are applied to the University of Missouri-Columbia libraries, they would entitle for a maximum of 176 user-based service staff, 198 collection maintenance staff, 67 new acquisition staff, and 18 base staff — an "ideal" total of

460. The 1980 Washington budgeting formula assumes funding for 64% of entitlement, or 294 FTE staff positions. This 294 compares with an actual of 207 FTE staff positions in UMC libraries in 1980-81. (See appended Table 9.)

9. FINDING: The consultants found that key library positions are vacant or about to be vacated. The Director plans to retire by March 1982. The Associate Director left in August to join the University of Mississippi. The general reference librarian plans to return to graduate school. Acting heads are in charge of technical services and access services.

EVALUATION: In his report (given below) Louis E. Martin, Cornell University Librarian, comments:

> The need for development and adoption of a good plan is made even more urgent by the need to recruit to the UMC Libraries qualified people for a number of important positions which are vacant or will fall vacant soon.... Without properly motivated and highly qualified staff, the best of plans means little. On the other hand, without a university commitment to a solid plan, the needed people will be hard to find.

Library Building Facilities

10. FINDING: As shown in appended Table 1, the University of Missouri-Columbia now has 180,000 assignable square feet (a.s.f.) under Library Administration. The Missouri State Historical Society occupies 31,500 a.s.f. in the Ellis building. The UMC building space inventory records over 21,000 a.s.f. in 37 departmental reading/study rooms and 40,800 a.s.f. in 95 residence hall reading/study rooms, not administered by the Library. (See the specific facilities projections summarized in Chapter 3 and its tables in Appendix 3.)

EVALUATION: Using established library facilities unit area criteria, the University of Missouri-Columbia NOW needs at least 160,000 a.s.f. of stacks for the 2.0 million volumes it now houses in less than 100,000 a.s.f. of fully-saturated stacks.

EVALUATION: If UMC libraries had 6,000 reader stations (27% of its FTE enrollment, between the ACRL minimum of 33% and the common state standard of 25%), it should have at least 180,000 a.s.f. in reader space. It has about 50,000 reader a.s.f. in libraries. Even if the 60,000 a.s.f. in departmental and residence hall reading rooms are added, UMC still has only 60% of minimal reading-study criteria and less than half the reader space it should have as a major university research library.

EVALUATION: By moderate standards the UMC libraries should have at least 50,000 a.s.f. office and work space for staff, ideally 75,000 a.s.f. It has only 26,000 a.s.f. of office, service, and processing work station space, half the lower moderate norm.

EVALUATION: In 1980-81, the University of Missouri-Columbia should have had between 380,000 and 415,000 a.s.f. of library space, not counting departmental or dormitory reading rooms. It has only 180,000 a.s.f. under Library Administration. Even if nonlibrary reading rooms are added, the total of 240,000 a.s.f. is barely over HALF adequate.

11. FINDING: The environmental quality and functional organization of Ellis Library and most of the branch libraries are EXTREMELY dreary, overcrowded, badly furnished, and often poorly arranged.

EVALUATION: A combination of inadequate space, overcrowded books, services, and readers, and excessive deferred maintenance has accumulated in UMC libraries over the years. The consultants find much of the library space to be poorer quality than any of the university libraries with which they have worked.

EVALUATION: The consultants find the quality of the service of the staff to be remarkably high, contrary to an expectation of poor morale. Only the highest kind of dedication to their work can account for this, despite the poor environmental quality, inadequate space, and many disappointments of remedy.

12. FINDING: The University-wide studies of library resources published in 1976 by the Office of Library Studies, Office of the Vice President for Academic Affairs, (cited in appended bibliography) and "A Report of Recommendations for Library Development and a Summary of Current Status" by the University of Missouri Committee on Library Resources (April 1977) identified the acute deficiencies of adequacy of library space on the Columbia Campus.

EVALUATION: Significant progress is being made in planning and implementation of technological advances for the University Library System, especially with the acquisition of the Washington Library Network on-line computer catalog system. The Library Systems Office of the University Central Administration has an excellent implementation plan for networking all University libraries and others in the State linked together and to national systems. These new systems will greatly improve user services, but they will have little impact on overcoming the major deficiencies of building space.

EVALUATION: The multi-campus Library Storage project proposed to be located on the Columbia Campus has had high University priority for capital funding; the consultants recommend that this project be reexamined in the staged library development planning. The currently proposed integration of these Library Storage stacks with the Health Sciences Library can be accepted as given, if necessary; however, the integration of multi-campus storage with an addition to Ellis should be reopened in the development of options for staged library development. The closed-stack Library Storage building does not appear to address the major library needs of the University of Missouri-Columbia. It emerged as a compromise

several years ago that does NOT resolve currently acute deficiencies now evident on the Columbia Campus. A limited access storage for low activity materials may be needed in the future, but within the coming decade, at least, the need can far more effectively be met by increasing the proportion of high density but open user-access stack shelving integral with library operations in additions to Ellis Library, as well as in the new Law Library and Health Sciences Library. (See further discussion, Chapter 3, Section A, p. 41.)

13. FINDING: The location of Ellis Library, truly in the heart of the campus, is ideal — as excellent as any we know.

14. FINDING: With extensive remodeling, Ellis has the capacity to become an efficient, inviting, and effectively functioning central library, as good as or better than many newer modular libraries.

EVALUATION: With its fine central core location and potential for quality modernization, the Ellis Building should be totally dedicated to central library. The occupancy of most of the ground floor by the State Historical Society of Missouri and by the Ellis Auditorium, as separate entities, severely limits the capacity of Ellis to be remodeled and reorganized as a fully integrated library operation.

RECOMMENDATION: That the University central and campus administrations consider the feasibility of relocating the State Historical Society of Missouri (SHSM). Because it is a valued resource of the University, as well as the whole State, the SHSM should be relocated on campus on an important site, but in a location in which Society and the UMC Library complement one another. The consultants recommend relocating the SHSM to satisfactory alternative quarters as early in the staging plan as possible.

Since the SHSM now occupies 31,500 assignable square feet of Ellis, its relocation to high quality space clearly is a major facilities development project. (One option, Tate Hall when Law is relocated, currently has 28,500 a.s.f., which can be increased with remodeling to larger interior spaces.)

RECOMMENDATION: That auditorium of the ground floor, west end of Ellis be converted to library use, possibly as a 24-hour reading/study room with the reserve book collection.

SUMMARY FINDINGS: The libraries of the University of Missouri-Columbia are in critical need of expansion, remodeling, reorganization, and renewal.

For insight of a professional library administrator with wide experience, the Sasaki/Mackey/MIRA Team asked Louis E. Martin, University Librarian, Cornell University, to join in this study. Martin's observations on the University of Missouri-Columbia Libraries are reproduced on the following pages:

Observations of Louis E. Martin

Cornell University Librarian

LIBRARY FACILITIES PLANNING FOR THE UNIVERSITY OF MISSOURI/COLUMBIA

The following statement is offered as part of the phase one report of facilities planning for the University of Missouri/Columbia by the Sasaki/Mackay/MIRA planning team. It is based on two site visits to the campus, on 6, 7 and 8 July and 18, 19 and 20 August. During those visits numerous discussions were held with university administrators, librarians, and other members of the planning team, and most of the major library units were visited. It is quite clear that present library facilities are quite inadequate to the present, much less the future, and that an effective planning process for improvement must be implemented.

The present space situation is indeed dreadful. This observation applies to all of the libraries visited. By whatever standard one employs, the university community needs significantly improved library facilities, for books, for readers, and for staff. The librarians have been more than adept in utilizing available space to beyond its maximum capacity. The study of the library situation, reported on in 1977, points out clearly the insufficiencies of the libraries. The only palliative put into place was some leased storage space, which is now filled to capacity. If the future is to be ensured a coherent plan for adequate library space, essential to the provision of superior library services, should be put into place quickly.

The need for the development and adoption of a good plan is made even more urgent by the need to recruit to the UMC Libraries qualified people for a number of important positions which are vacant or will fall vacant soon. These include the posts of director, associate director, head of technical services, and head of access services. At a time which demands both administrative acumen and continuity, the library approaches an administrative vacuum. It is imperative, if the library system is to continue to serve the needs of faculty and students, that experienced, imaginative and industrious people be attracted to these jobs. Without properly motivated and highly qualified staff, the best of plans means little. On the other hand, without a university commitment to a solid plan, the needed people will be hard to find.

There is at present a university commitment to a solution to the book storage problem, a solution with university-wide library implications. It is to build a new health sciences library with a high density shelving facility beneath it. While the reasoning behind this proposal is understandable - such a facility would relieve the overcrowded shelves in all of the libraries - I recommend that the university administration rethink its commitment to this plan for the following reasons.

A large, high density shelving facilty speaks only to the needs of book storage. It does not provide seats for faculty and students, except as those may be recaptured in space now occupied by books in the Ellis Library. The number of new seats accruing to department and school libraries would appear to be minimal. Further, it provides no new space appropriately designed for a comprehensive university library in an age

when that library is ever more reliant on the computer technology and telecommunications necessary to improved library services. Finally, a large shelving facility, such as that proposed, if it is to be used effectively, will result in the removal of volumes from the various libraries which are in relatively high demand. Although, in the long run, large university libraries cannot avoid remote storage, in my opinion it should not be accomplished before careful planning for proper services, especially retrieval from the remote storage, is in hand.

It is my recommendation that an alternative plan be developed, which recognizes the present Ellis Library and the vacant space adjacent to it to the south, as an unusually effective site for the further development of the central library resources serving the entire university system. The space in question is excellent in that it is at the center of things for the entire university community, with the exception of the health sciences, which is and which will continue to be serviced by its own library. (It should be noted, parenthetically, that there is no disagreement whatever with the commitment to build a new health sciences library. It has been badly needed for some time.) The plan should involve both new construction to the south of the present library and remodeling of the Ellis Library which, one must assume, can be used efficiently for the indefinite future with proper alteration. The Ellis Library building could then serve as the processing and administrative center of the university library complex.

If this plan is pursued, the present need for dense book shelving could be met by building a large shelving facility below grade to the south of the Ellis Library. Future construction could include above ground structures on the same site to serve a variety of library purposes, such as the bringing together of the vast majority of scientific/technical materials. These new facilities would make a remote book storage facility unnecessary for a good many years. Admittedly, such a building probably is in the future because it would provide economical shelving since it would not occupy prime university real estate.

If the suggested reliance on the Ellis Library and adjoining space could not be implemented for some reason, then the proposed shelving facility beneath the health sciences library should be accomplished. As mentioned, it would provide some short-term relief, and it would be space which would prove useful to whatever purpose it was turned in future decades. This structure, however, if it came about, must not preclude active planning for the future use of Ellis and the square footage across Conley Avenue for library purposes. Many book shelves underneath a new health sciences library do not speak to the long-term library needs of UMC.

Another major consideration, if the shelving alluded to above is implemented, is the possible removal from the Ellis Library of the State Historical Society of Missouri. The society now occupies approximately 30,000 assignable square feet in the building, about 20 percent of the whole. While the work of the society does complement that of the library, it is not essential to it. Given the information needs of the faculty and students of the university, it is inappropriate to allocate such a large amount of space to the society that the central work of the library is seriously impeded. I should like to recommend that this issue be investigated.

Finally, something must be done in the immediate future to alleviate the book shelving problem. I have seen the space in the former laboratory school, the gymnasium space, which could be made available for shelving. It appears to be eminently usable for that purpose. In fact, there are some nearby spaces which might also be used for shelving or other library activity. As Mr. Mason pointed out, these spaces could also speak to certain other library needs in the future.

If this remedy is taken, it must be kept in mind that the laboratory school space would not substitute for the current annex space and operation. It does not contain enough square footage to allow any efficient and effective move of books from the one to the other. Planning should accept two storage facilities for the near future, both of which probably would need staff if they are to be used effectively. Unnecessary moving of books should be avoided at just about all costs.

Once again, I should like to stress the importance of moving forward with detailed plans for the library facilities needed by the faculty and students of UMC. They have been living, for some time now, with facilities clearly inadequate by any yardstick.

L. E. Martin

Louis E. Martin
25 August 1981

/pa

Library Development in the Campus-Wide Context

The overriding significance of library development is a critical factor in the Comprehensive Plan for the University of Missouri-Columbia. This became evident to the planning consultants early in their Comprehensive Planning Study. This Library Evaluation and Planning Study emerged to provide the greater depth of planning needed for finding workable solutions to the library problems.

The "Alternative Library Site Study" (October 21, 1980) conducted by Mackey and Associates demonstrated that need for more thorough assessment of library development in the broader context of campus-wide planning. Mackey wrote in that report:

> It is clear to us that a carefully conceived master plan is in order for a meaningful development of the Columbia campus, in order to achieve an environmental quality that is equal to the quality of education provided.... Careful consideration for future options must be considered in regard to the site between Conley and Rollins, south of the Ellis Library.

The Mackey library site study examined five options/alternatives for siting the proposed multicampus "Library Storage" facility in relation to Ellis Library and the proposed new Health Sciences Library. These included:

> (Option 1) siting the Library Storage south of Ellis across Conley Avenue, as recommended in a 1978 study and as originally requested in the UM 1981-82 Legislative Budget Request for Capital Items;
> (Option 2) integration of Library Storage under the new Health Sciences Library north of Medical Sciences;
> (Option 3) a smaller Library Storage high density stack capacity adjoining the Health Sciences Library and designed for its expansion;
> (Alternative A) integrate the high density Library Storage with an addition to Ellis (closing Conley Avenue), separate from Health Sciences; and (Alternative B) locating the high density Library Storage stacks underground, across Conley Avenue connected by tunnel to Ellis.

The Mackey study (p. 54) states the following about Alternative A:

> As a result of studying the alternate locations and interviewing various people on campus, we feel there are other configurations that may be more direct in responding to the needs of the students, faculty, and library system in the long term than building a new separate storage facility.
>
> Therefore we have examined this alternative...to close Conley Avenue from Hitt Street to Ninth Street and construct a new phased addition to Ellis Library.... This program by its configuration, when complete, will allow activities at all levels to be expanded by adding a total of 204,480 sq. ft. of library area to Ellis and will have satisfied the program...by establishing a new Library Storage Facility of 85,800 sq. ft. below the Ellis addition where

logical planning says it should be and allowing the Health Science Library to stand alone as part of the Medical Center. A planned 3-phase expansion to the Ellis Library building will increase floor area by 122 percent thus allowing the library staff to address and meet the students and faculty needs for many years without again overcrowding the facility.

Following the Mackey study, however, the University amended its Capital Item request to integrate the proposed Library Storage Building with the Health Sciences Library (see "Program for a Combined Health Sciences-Library Storage Building," 1st Draft, May 1, 1981). The consultants have been advised that a strong commitment has evolved for integrating the multi-campus Library Storage stacks with the Health Sciences Library. The project, however, was not funded for 1981-82; the consultants recommend use of other ways in which more efficient book storage can be integrated with staged construction of the Law and Health Sciences libraries and additions to Ellis Library projected in this study.

From the context of the campus-wide development planning, J.E. Robinson, the Director of Institutional Services of Sasaki Associates, summarizes his findings in the following memorandum:

SA

Sasaki Associates, Inc., 64 Pleasant Street, Watertown, Massachusetts 02172 · (617) 926-3300 Telex 92-2471

RE: Library Location and Design Considerations, University of Missouri, Columbia

MEMORANDUM: BY: J. Robinson jrh DATE: 8/26/81

TO: T. Mason, L. Martin, G. Mackey

At this time (the conclusion of the investigation of existing conditions), perhaps the physical planning and design aspects can be summarized as:

1. Reserve substantial land area south of Ellis Library for future library and library related facilities. The latter might eventually include the central campus computer facility, the school of library and information science, commuter student study center, etc. Develop staged and alternative programs for this contiguous development in the continuing study this fall.

2. Develop careful and imaginative facilities programs, design criteria, and locational requirements (both siting and within buildings) for the two projected new libraries: Law and Health Sciences. Each should be programmed for effective operation at occupancy (responding to limitations of budget, schedule etc.) but also should identify future growth and improvement as required to develop outstanding libraries as far as forseeable into the future. Ideally, each of these libraries could grow without the necessity of relocation or of new construction. Each thus may offer opportunities for interim use of future library space either for book storage or for other uses.

3. Identify needs and opportunities for improvement to all branch libraries and other collections, including consideration of developing each as important general study centers (for commuters as well as for residents escaping noisy housing) and also consideration of each as "showcasing" the disciplines served, revealing to non-specialists the excitement and interrelatedness of the materials throughout the University's collections.

dls/ # 1130
0368

Options for Staged Library Development

In our preliminary report to the Chancellor's Comprehensive Planning Group on August 20, 1981, we requested authorization to proceed in September with Step Set 2 of the Library Evaluation and Program Planning Study. This next phase involves detailed projections of library development and calculation of facilities requirements. for library development. That report memorandum states the need to carry out this programming with options, responsive to differing conditions and alternative solutions:

> Our current evaluation shows the need to examine two or three OPTIONS of alternative approaches to Library development. For example, one option is to assume that the State Historical Society can be relocated to permit central library expansion into the 31,500 a.s.f. it now occupies in Ellis. Another option is to assume greater consolidation of branch libraries with expansion of Ellis and renovation or new construction (for example) to provide a single branch serving the sciences, engineering, and mathematics.
>
> . . . . . .
>
> We believe that the need for this detailed programming/staging study for library development is one of the most critical facilities problems of the Columbia campus. If sufficient funding is to be (secured) for the capital development requirements, a detailed ten-year staging plan should enhance University commitment and State approval that can be funded in reasonable appropriations each year. Such a clear staging plan also can enhance fund-raising from private sources.

This report seeks to provide a decision framework for refinement into a staged capital development program for UMC libraries. Chapter 2, Section A, summarizes the comparison of the University of Missouri-Columbia Libraries with 26 other members of the Association of Research Libraries selected as a peer group. Section B summarizes projections of the UMC Libraries in the context of overall UMC instruction, research and service programs for 5-, 10-, and 20-year planning stages of library collection development, user demand, and staffing requirements. These projected development options are translated in Chapter 3 into projections of assignable floor area requirements to house the projected development. Chapter 4 outlines, in necessarily tentative form, some alternatives for staged library development over the coming ten and twenty years. These are tentative, since more detailed examination of a given concept depends on selection of the more feasible options, dependant on a number of pending University decisions.

Among those decisions, the consultants recommend that

> The Multicampus Library Storage component of the 1982-83 Capital Items request be replaced with planning for high density open stacks for significant portions of the collections in remodeling and additions to Ellis Library, and in the new Law Library and Health Sciences Library.
>
> As part of the forthcoming classroom study, a way of closing the Ellis Auditorium be sought so that area of the ground floor may be converted

to critically needed library use.

The University work closely with the staff and governing board of the State Historical Society of Missouri to identify, program, and work toward capital funding of an alternative campus location for the Society and its library collections.

Other decisions for a staged capital development plan for library expansion and renovation are suggested in the following chapters.

Libraries of the University of Missouri-Columbia:

Chapter 2
COMPARISON AND PROJECTIONS OF UMC LIBRARIES

Section A: Comparison with Peer Libraries

The library evaluation in Chapter 1 uses common norms and library planning-budget formulas to compare existing library resources at the University of Missouri-Columbia with "desirable" sizes of collections, annual acquisition rates, reader facilities, and staffing indicated by current UMC degree programs and enrollments.

Although widely used across the country by various funding agencies, the validity of these norms for the University of Missouri-Columbia requires further study by comparing the UMC library resources with those of other peer institutions. To help arrive at justifiable assumptions for program planning UMC library facility requirements, the consultants prepared the comparison of library collection sizes, acquisition rates, and program indicators summarized in this section of Chapter 2.

The groups of 27 peer university libraries selected for this study are:

Seven Big Eight Conference institutions that are members of the Association of Research Libraries (ARL). (Kansas State is excluded because it is not an ARL member, so comparable library data are not available.)

Nine Big Ten Conference institutions that are public-funded (excluding Northwestern).

Eleven other ARL-member institutions selected because they are broadly similar to UMC in enrollment size and general program characteristics.

Comparability of institutions and their libraries can only be general in terms of size and program mix. For instance, relatively few institutions have law, medicine, veterinary medicine, and agriculture on the main campus. In the selected 27 peers, only Minnesota, Ohio State, Wisconsin at Madison, and Kentucky are like UMC with law, medicine, agriculture, and veterinary medicine on the main campus. However, the peer institutions selected are generally similar; they provide a range of library collection size and acquisition rates that provides a reasonable perspective on appropriate planning targets for library development at the UMC.

The institutional and library data analyzed in this section are from the new

report of the Association of Research Libraries, CUMULATED ARL UNIVERSITY LIBRARY STATISTICS: 1962-63 through 1978-79 (1981), and from ARL STATISTICS: 1979-80 (1980). The 1980-81 ARL Statistics are not yet published at the time of this analysis. The tables at the end of this section cover the fiscal years 1978-79 and 1979-80.

The tables described below are grouped in Appendix 2.1 at the end of this report.

Table 10 groups the data by Big 8, Big 10, and the Other Selected institutions and compares their 1978-79 indicators. The last two columns, page 2 of Table 10 shows what the 1978-79 acquisitions would be if the 27-ARL library AVERAGE net acquisition rate of 3.1% is applied to the collection size of each library. This shows (last column) the extent to which the institutions' actual acquisitions varied from that combined average rate of acquisitions.

Table 11 shows the same data and institutional grouping for 1979-80, comparing actual acquisitions with the combined average rate of 3.13% for that year. UMC net acquisitions were 13,000 less than the 63,000 volumes that would have been added in 1979-80 at the average rate of the ARL peer comparison libraries.

Table 12A gives the indicators of program-to-collections for the Big 8, Big 10, and Other Selected for 1978-79 but compares actual net acquisitions that year with a "norm" of 5% of the collection size in volumes. This norm is based on the concept that published knowledge doubles every 16 years and every 12 years in the sciences. (See references to Council on Library Resources, 1959, and to Derek J. Price, 1956, in Chapter 1.) A 5% collection growth rate would double its size every 15 years. Only Florida State and Virginia polytech reached and exceeded the 5% acquisition rate in 1978-79.

Table 12B shows the same indicators and the variance from the 5% acquisition rate norm for 1979-80. Only Virginia Polytech exceeded 5%, with a 6.9% net acquisition rate in 1979-80.

Table 13 compares the library indicators for the two years, 1978-79 and 1979-80. In the last two columns of page 2, Table 13, the acquisition norm of 3.72% is applied to the 27 peer libraries. This rate is derived from application of the formula of the Washington State Council for Postsecondary Education applied to UMC in Table 7, Chapter 1, of this Library Program Planning Study. This formula would budget UMC Library acquisitions at 3.716% of collection size. It is applied in this comparative study to the net acquisitions reported by the peer group libraries to ARL in 1979-80. Iowa State, Oklahoma, Wisconsin-Madison, Colorado State, Connecticut, Florida State, Georgia, Massachusetts-Amherst, and Virginia Polytech passed the 3.72% normative acquisition rate. UMC fell short by nearly 25,000 volumes.

Table 14 regroups the 27 peer comparison libraries according to size of collection, rank ordered by TOTAL VOLUMES reported to ARL for 1979-80. Three size groups are used:

Larger: The six institutions (all Big 10) with over 3 million volumes.

Midsize: The 13 institutions with 1.5 million to 3 million volumes.

Smaller: The eight institutions under 1.5 million volumes.

The University of Missouri-Columbia ranks 10th of the 28 collection sizes, immediately below the University of Kansas. Louisiana State, with 1,822,626 volumes in 1980 is at the median 14th (with the University of Colorado-Boulder and the University of Oklahoma close by the median).

Table 14 demonstrates the extent to which size of collection and acquisitions link to campus enrollment size and the proportion of graduate students. Institutions with smaller collections have higher ratios of acquisitions-to-volumes, but the number of net acquisitions is significantly smaller as collection size is smaller. Although some institutions (such as Virginia Polytech, University of Massachusetts-Amherst, and University of Georgia) have much higher acquisition rates, most of the midsize and smaller libraries run about half the number of acquisitions of the larger group. The University of Missouri-Columbia in 1979-80 was significantly below the averages of the 28 institutions and the midsize group in numbers and rates of net acquisitions.

Table 15 summarizes the group averages, both in the Big-8, Big-10, Other Selected groups and in the collection size groups for the two years, 1978-79 and 1979-80.

The detail of Tables 10-15 are summarized by group averages below.

SUMMARY OF COMPARATIVE FINDINGS

The following summarizes the data and ratio indicators reported by the 28 peer libraries to ARL for 1978-79 and 1979-80, comparing the University of Missouri-Columbia with the AVERAGES of the various comparative groupings:

Institution Group	Enrlmnt Index	Grad Std /Enrlmnt	Total Volumes	Acquis./ Volumes
1978-79 Averages:				
Univ. of Missouri-Columbia	23,545	0.093	1,984,632	0.0279
Big 8/ARL Libraries	22,879	0.081	1,653,636	0.0309
Big 10-Public Libraries	40,343	0.130	3,512,276	0.0265
Other Select ARL Libraries	23,132	0.086	1,581,804	0.0394
Combined 27 Libraries	28,803	0.105	2,243,918	0.0310
1979-80 ARL Data:				
Univ. of Missouri-Columbia	24,169	0.094	2,016,647	0.0248
Big 8/ARL AVERAGES	23,601	0.083	1,703,326	0.0300
Ranges:				
Big 8 HIGHEST	24,914	0.128	2,148,451	0.0400
Highest Institution	Iowa St.	Colo.	Kansas	Iowa St.
Big 8 LOW	22,492	0.051	1,253,052	0.0190
Lowest Institution	Nebras.	Okla.St.	Okla.St.	Okla.St.
Averages:				
Big 10-Public Libraries	41,866	0.126	3,581,471	0.0288
Other Select ARL Libraries	23,825	0.095	1,614,981	0.0368
By Size Group, 1979-80:				
Larger: Over 3 Million Vols.	44,848	0.139	4,316,605	0.0276
Midsize: 1.5 - 3 Mlln Vols.	25,983	0.095	1,945,484	0.0328
Smaller: Under 1.5 Mlln Vols.	24,633	0.084	1,341,298	0.0366
AVERAGE of 27 Libraries	29,780	0.107	2,293,382	0.0313
HIGHEST of 27 Libraries	55,879	0.171	5,936,823	0.0690
Highest Institution	Minn.	Mich.	Illinois	V.P.I.
LOWEST of 27 Libraries	19,248	0.039	1,226,037	0.0180
Lowest Institution	Colo.St.	S.I.U.	V.P.I.	Minn.

Among the Big 8 ARL university libraries, in 1979-80 the University of Missouri-Columbia is second in size to the University of Kansas. Among the 27 institutions in the peer comparison, UMC ranks 10th in total volumes but 20th in net volumes added. The UMC net acquisitions-to-total-volumes ratio was 5th in the Big 8 (0.025 compared to the Big 8 average of 0.030) and 21st among the 27 peers.

In terms of emphasis on graduate work, UMC is similar to Kansas and Colorado among the Big 8 institutions, but all three are significantly lower in graduate proportions than most Big 10 institutions and near the average graduate ratios of the Other Selected comparison group.

The library acquisition rates of the University of Missouri-Columbia in recent years suggest that it is falling behind in the adequacy of its library collections in response to the growth of significant scholarly literature. After review of the comparative data, the consultants feel that at least 75,000 volumes per year should be the target for net acquistions over the first five years of a staging plan. That level of acquisitions would be the 1980-81 net volumes added at UMC under the Washington budget formula (Table 7, Chapter 1). If the University of Missouri-Columbia hopes to maintain its library resources to nearly equal the University of Kansas, acquisitions of 75-80,000 volumes per year would be needed. If the UMC hopes to move closer to the Big 10 model, its acquisitions will have to be at least 100,000 net volumes per year and more nearly the 130,000 rate currently indicated by the entitlement factor of the Washington formula (Table 7, Chapter 1).

After review of this chapter in draft form with University officers, it was decided to project several alternatives of rate-of-collection growth to reflect differing conditions of funding acquisitions. For purposes of projecting the bound volumes growth of UMC libraries for this program plan, the following alternative acquisition rates are used in the projections in Chapter 2, Section B:

A rate of 40,000 net acquisitions per year.

A rate of 55,000 net volumes added per year, slightly above the 1980-81 actual rate.

A rate of 70,000 net acquisitions per year, approaching the Washington budget formula value computed on Table 7, Chapter 1.

A RECOMMENDED rate of 100,000 net volumes added per year, more nearly approaching the normative rates to keep up with published knowledge and information growth.

It is recommended that the library development planning initially aim for a capacity of 3,000,000 total volumes. This size would be reached by 1990 at the RECOMMENDED 100,000 volume/year acquisition rate. The lower acquisition rates delay the time when the 3,000,000 volume capacity will be reached—25 years at the 40,000/year rate. Longer term planning should aim for a 4,000,000 volume capacity early in the 21st century; by that time, however, the new forms of electromagnetic information storage and retreival will likely have a fully significant impact on the nature of library resources in ways not yet adequately predictable.

The projections in Chapter 2, Section B, indicate the alternatives for staging library capacity development over the coming 20 years. The new forms of electromagnetic storage, retrieval, and networking will become increasingly significant in the next two decades, but the primary form of information production and use still will be the printed book and periodical.

Chapter 2
COMPARISON AND PROJECTIONS OF UMC LIBRARIES

Section B: Projection of UMC Library Program Development

Projections for 5-, 10-, and 20-year potential development of library resources of the University of Missouri-Columbia are made in terms of several program plan alternatives. These reflect suggested ranges of growth and change within which the University may shape specific decisions for staged library capital development in the coming decade.

The key program elements for libraries are the COLLECTIONS of information they house; the USERS of that information; and the STAFF that acquires, processes, stores, and helps users retrieve the information. The building floor space required to house growing and changing kinds of collections, changing user demand, and the staff collection and user services is determined by the quantities and kinds of each projected in this section.

In the context of the Comprehensive Plan study a being done by the Sasaki/Mackey/MIRA Team, the key elements of Library development involve a multitude of interactive decision processes. Among those emerging, the following library projects have clear University commitment:

* A new Health Sciences Library, toward which over $2 million in private funds have been contributed.
* A new Law Library, part of the new School of Law Building toward which the State has made future funding commitments. Detailed programming of the Law building, including the Law Library, is about to begin.

To project the overall UMC Library development options, the consultants began with the Law Library and the Health Sciences Library. (These are separately calculated in Chapter 3 Facilities Programming with individual growth rate and size options.) Next, the combined campus totals for collections, reader/user demand, and staffing were calculated, using the growth options emerging from the Evaluation and the Comparative library studies. Law and Health Sciences, using selected options, were deducted from the combined totals. Then the smaller branch libraries were allocated portions of the projected growth, assuming the same rates experienced in them in 1980-81. The remainder is allocated for inclusion in Ellis Library. Its facilities needs are calculated as a unit in Chapter 3.

Tables 16, 17, and 18, given in Appendix 2.2 to this report, show the combined projections of collections, user/reader demand, and library staff for the Columbia Campus. Allocations to Law, Health Sciences, and the other branch libraries are made, with the residual to Ellis Library according to selected options. These are briefly described in the following pages.

Collection Growth Options

The collections housed in the libraries traditionally and predominantly are in printed form of books, periodicals, and documents. Increasingly in the past 20 years, more library resources are received in or converted to microform photographic images of printed material for compact storage. During the next 20 years, increasing use will be made of electromagnetic information storage on tapes, disks, and other forms of memory, often located elsewhere. These are retrieved locally on terminals with computer-managed communications networks by cable or radiomicrowave, increasingly worldwide through satellite relays. The user often wants these micromemory-stored information resources reproduced in "hard copy" printed form, especially for research and scholarly study, rather than the transcient images on a microform reader or video terminal screen where the search, retrieval, and initial reading is done. The printed form remains predominant. Although storage and retrieval technologies will be changing rapidly over the next 20 years, the printed BOUND VOLUME will continue to be the principal form of information storage.

The consultants recommend that the UMC Library Capital Development Plan be targeted to 20-years: the Year 2000. While staging of that development may be to serve increments of 10-years, the design of all stages should be based on the full 20-year program development and facilities requirements projections selected by the University for implementation planning, design feasibility study, and rational staging of construction to spread capital funding. The 20-year capacities required to house projected collections depend on rates of annual net acquisitions of library materials by type.

Table 16 (in Appendix 2.2) projects the COMBINED LIBRARY COLLECTIONS with four acquisition rate-of-growth options. These options are discussed above on Page 21 of Section A Comparison with Peer Libraries. The resulting total bound volume collection sizes in 20 years are as follows:

1980-81 total bound volumes = 2,068,800;
The 1980-81 net acquisitions of 52,000 volumes projected 20 years = 3,111,600 volumes;
Option T-1: 40,000 net acquisitons per year = 2,868,800;
Option T-2: 55,000 net acquisitions per year = 3,168,800;
Option T-3: 70,000 net acquisitions per year = 3,468,800;
RECOMMENDED Option: 100,000 volumes added per year = 4,068,800.

Economic conditions in Missouri (and throughout the U.S.) suggest serious problems of funding desirable acquisition rates for a graduate-research university library to keep up with the growth of information and knowledge resources vital to its academic and professional programs.

In the short run, limited funding may require that acquisition rates drop as low as 40,000 bound volumes per year (Option T-1) plus other materials. At best, short-run acquisition budgets may permit only the comparatively low 1980-81 rate of 52,000 bound volumes or the 55,000 of Option T-2. The consultants hope that the acquisition budgets can be raised to at least 70,000 (Option T-3), approaching the Washington Formula cited in Chapter 1 Table 7).

THE CONSULTANTS RECOMMEND THAT THE UNIVERSITY OF MISSOURI-COLUMBIA SEEK TO BRING THE NET ACQUISITION RATES FOR ITS LIBRARIES UP TO 100,000 VOLUMES. Louis E. Martin of Cornell, the consultants' professional librarian advisor, made the following comments in response to an earlier draft calling the RECOMMENDED 100,000-volume rate "Ideal Option":

> Since 100,000 volumes is labelled, "ideal," I assume it is not achievable. In the world of publishing and scholarship today, however, and in view of the mission of the University of Missouri-Columbia, an acquisitions rate of 100,000 volumes per year for a campus cannot be considered excessive at all. In fact, given the demands for information resources in a major university that growth rate would be considered very reasonable, even modest, by some critics. The other end of the scale, 40,000 volumes per year, appears to me to be woefully inadequate. If the ideal can't be achieved, then I certainly hope we avoid the nadir. Couldn't we make every effort to attain the 70,000 volume mark at the very least?

For capital development planning, IT IS RECOMMENDED THAT THE PLANNED 20-YEAR CAPACITY OF THE COMBINED LIBRARIES OF COLUMBIA CAMPUS BE AT LEAST 3,500,000 VOLUMES, PREFERABLY 4,000,000 VOLUMES.

Four collection growth options are calculated for the LAW LIBRARY, with the resulting total Law volumes in 20 years:

1980-81 bound volumes = 148,003;
Option I: 3.13% net acquisition rates (ARL peer average) = 276,000;
Option J: 6000 volumes added/year = 269,000;
Option K: 9000 volumes added/year = 329,000;
Option L: 5% annual net acquisitions = 376,500.

Option J (6000 volumes added/year) is assumed in deducting the Law volumes from the combined totals in Table 16.

For HEALTH SCIENCES LIBRARY, the following acquisition rate options, with resulting 20-year total volumes, are used:

1980-81 Bound Volumes = 133,640;
Option A: 3.76% annual net acquisitions (average of 13 peer medical school libraries) = 279,600;
Option B: 4.66% annual net acquisitions (average of all U.S. medical schools) = 332,300;
Option C: 5% annual net acquisitions (preferred Health Sciences keep-up rate) = 354,600.

Option B (4.66% acquisition rate) is assumed in deducting Health Sciences projected volumes from the combined totals.

The DIFFERENCE of volumes remaining after deducting Law Option J and Health Sciences Option B from the combined totals is shown on Table 16.

Next the estimated allocations to OTHER BRANCH libraries are made, assuming that they grow in bound volumes at the approximately the same rates as in 1980-81. THIS ALLOCATION REFLECTS THE RECOMMENDATION OF THE CONSULTANTS THAT THE MATHEMATICAL SCIENCES LIBRARY BE RELOCATED INTO ELLIS, WHEN ADDITIONAL SPACE IS AVAILABLE. At this stage, detailed programming has not been attempted on the other branch libraries pending future University program studies planned in the coming year.

The balance, at the bottom of Table 16, is the ALLOCATION TO ELLIS. Applied to the combined library options, the 20-year average annual volumes added and the totals in 20 years to be housed in Ellis and its additions are as follows:

Ellis Library 20-Year Projections

Ellis (with its share in Library Annex) 1980-81 = 1,620,200 volumes;

1980-81 Growth Rate: Add 32,950/year in Ellis = 2,227,400;

Option T-1: Add 20,800/year = 2,036,400;

Option T-2: Add 35,800/year = 2,336,400;

Option T-3: Add 50,800/year = 2,636,400;

RECOMMENDED Option: Add 80,800/year = 3,236,400.

The present NORMAL capacity of Ellis Library is estimated at about 1,000,000 volumes. Thus, even at the lowest acquisition rate, it should DOUBLE in size of collection in 20 years, and, PREFERABLY, it should triple its bound volume capacity by the Year 2000.

Reader Station Options

Reader Stations are the various kinds of places for USERS to work in the library for study and research with the information resources it houses. In a multi-purpose university with many undergraduate, graduate, professional, and research programs, work in the library is expected to be about triple the time spent in direct instruction and research in the classroom or laboratory. The numbers of students, the kinds of subjects they study, and the levels of learning achievement they have reached are determinants of building space required to accommodate student reader stations. The higher the level of the student, the more time expected in library research and study with materials beyond the textbook.

As part of the Comprehensive Plan Study of the Sasaki/Mackey/MIRA team for the University of Missouri-Columbia, TASK 3 is the "Identification of campus-wide facilities program requirements for the foreseeable future." This includes the PROJECTION OF STUDENT LOADS, from which faculty, support staff, building space, and other resource requirements are derived.

The following options of projected student loads at UMC have been made under TASK 3 work (Memorandum on REVISION OF STUDENT CREDIT HOUR PROJECTIONS from Dr. T.R. Mason to Dr. Duane Stucky, December 15, 1981):

OPTION 1 - Assume that NUMBER and distribution of UMC FTE Students REMAIN CONSTANT at the Fall 1980-81 base.

OPTION 2 - Assume a 15 percent DECREASE in UNDERGRADUATE (Lower and Upper Division) student loads; a 10 percent DECREASE in GRADUATE loads; and CONSTANT FIRST PROFESSIONAL Law, Medicine, and Veterinary Medicine degree programs and their associated graduate work.

OPTION 3 - Assume that LOWER DIVISION student loads will DECREASE from 151,000 SCH in Fall 1980 to 125,000 SCH (-17.3%) over the next 20 years; that UPPER DIVISION will INCREASE from 116,000 SCH in 1980 to 125,000 SCH in 20 years (+7.8%); that GRADUATE and FIRST PROFESSIONAL will INCREASE FROM 55,000 SCH in 1980 to 80,000 in 20 years (+45.6%).

These changes are applied equally to each school or college, but the effects vary with the mix of lower division, upper division, graduate, and first professional levels in each school or college. For the following projections of library student user demand, the options are applied generally, but in allocation to branch libraries, the school-college mix is reflected.

Table 17 in Appendix 2.2 shows the projected library student reader station demand projected for 5, 10, and 20 years by various options of student credit hour (FTE student) teaching load changes. In summary, the Full-Time Equivalent Student (FTES) projected options are as follows:

Twenty-Year FTE Student Options

Level of Instruction	OPTION-1	OPTION-2	OPTION-3
Lower Division	10,076	8,585	8,330
Upper Division	7,724	6,585	8,330
Subtotal Undergraduate	17,800	15,130	16,660
First Professional	1,347	1,350	1,960
Graduate	2,774	2,500	4,040
TOTALS FTE STUDENTS	21,921	18,980	22,660

Several different options of ratios by which numbers of library student user stations are determined are identified in the Chapter 1 Evaluation (Table 8 shows norms compared with current actual in Table 3). Three of these normative reader station ratios are applied the the three Projected Student Load options in Table 17.

The 20-year student reader stations projection options are summarized as follows:

Student Reader Stations

Norms Readers/FTE student	Option-1	Option-2	Option-3
25% FTE Students (Common State Norm)	5,480	4,475	5,665
33% FTE Students (ACRL Norm)	7,307	6,327	7,553
WICHE-PMS Criteria (Facilities Manual 4)	5,418	4,737	5,862

Using the WICHE-PMS Criteria as the option selected, the projected campus-wide reader stations are allocated in Table 17 (as rounded in Table E-2):

Law Library (Opt.H)	340	340	375
Health Sciences Library	455	440	550
Other Branches	815	580	730
BALANCE TO ELLIS	4,010	3,400	4,205

Ellis Library now has 1,718 general reader stations and 46 faculty studies. AT MINIMUM, THE NUMBER OF READER STATIONS IN ELLIS NEEDS TO BE DOUBLED.

Projected Library Staffing

Table 18 in Appendix 2.2 shows the projected library staffing. This projection uses the budget formula of the Washington Council for Postsecondary Education (see Chapter 1, Table 9). Staffing requirements are based on numbers of users, on maintenance of current collection sizes, on new resource acquisition rates, and on a base staff with increments for branch libraries. The user-based staff projected in Table 18 is calculated from Student Load Option 1, in which 1980 FTE are held CONSTANT. The maintenance staff and the new resource acquisition staff are conservatively calculated on Option T-2, in which the collection grows to nearly 3,200,000 volumes plus other materials at the rate of 55,000 net volumes added per year. The base staff of 16 assumes Ellis plus 7 branches (not counting Math Sciences assumed to be relocated into Ellis).

Given a total library staffing projection (budgeted under the Washington formula at 64% of "entitlement"), the staff are allocated to those programmed for Law and Health Sciences (in Chapter 3) plus continuance of 1980-81 staffing ratios in the smaller branch libraries. For 1980-81 projected 5, 10, and 20-years, the following staff numbers result:

Basis/Library	Projected Library Staffing 1980-81	5-years	10-years	20-years
64% WCPE FORMULA:				
User-Based Staff	80.84	112.85	112.85	112.85
Maintenance Staff	102.99	143.78	160.65	184.40
New Resource Acq.	32.90	45.94	45.94	45.94
Base Staffing	7.33	16.00	16.00	16.00
TOTAL FORMULA BUDGET:	224.06	312.81	329.68	363.42
Allocation by Library:				
Professional				
Law Library	5.00	6.00	6.00	6.00
Health Sci. Library	7.00	12.00	12.00	12.00
Other Branches	5.00	9.20	9.57	10.36
ELLIS LIBRARY	41.00	77.08	82.31	92.78
Support Staff				
Law Library	6.26	12.00	12.00	12.00
Health Sci. Library	8.89	24.00	24.00	24.00
Other Branches	11.51	13.78	14.42	15.89
ELLIS LIBRARY	141.39	158.74	169.36	190.58
TOTAL STAFF				
Professional Staff	58.00	104.27	109.89	121.14
Support Staff	166.06	208.54	219.78	242.28
TOTAL STAFF	224.06	312.81	329.68	363.42

Using the Washington Budget formula the combined library staff is projected to increase 62 percent over the next 20 years. Professional Library staff is projected to double. Support staff (including hourly student assistants) would increase 48 percent. The ratio of support-to-professional staff becomes the common ARL ratio of 2:1 rather than the 3:1 current ratio. Much of the growth is the collection maintenance component as its size grows. If higher acquisition rates (as recommended) can be achieved, the new resource acquisition component under the Washington formula would be accordingly increased. If the student load projections are the increase or decrease options, the user-based staff could be accordingly adjusted. This use of the Washington formula, it should also be noted, would bring the Library staffing at the University of Missouri-Columbia more nearly into line with the norms advocated by the Association of College and Research Libraries and the averages of the peer library members of the Association of Research Libraries.

The foregoing projection options of the collections, users, and staffing of University of Missouri-Columbia Libraries provide the foundations for the facilities programming described in Chapter 3.

Libraries of the University of Missouri-Columbia:

Chapter 3

LIBRARY FACILITIES PROJECTIONS

Chapter 3 converts the library program projections of collections, user stations, and staff summarized in Chapter 2B into assignable square feet of building floor area. These facilities projections are shown in detail in the tables in Appendix 3 for Ellis Library (Tables E-1 through E-4), the new School of Law Library (Tables L-1 through L-5), and the new Health Sciences Library (Tables HS-1 through HS-4). Tentative projections are made for facilities of the State Historical Society of Missouri (Tables H-1 through H-3), to be revised by its staff and governing board in consultation with University staff.

At this time, facilities projections are not completed for the other branch libraries, since most of these will be studied as part of planned program studies (of Engineering, Arts and Science, Journalism, Agriculture, and Veterinary Medicine) in the coming year. Their program development allocations are estimated in Tables 16, 17, and 18 in Chapter 2B to determine the residual collections, users and staff allocated to Ellis.

The following sections summarize the facilities programming projections for Ellis Library (Section A), Law Library (Section B), Health Sciences Library (Section C), and the tentative projections for the State Historical Society of Missouri (Section D):

SECTION A: ELLIS LIBRARY FACILITIES

Tables E-1 through E-4 in Appendix 3 show the detailed calculations converting collection, user station, and staff/service program elements into assignable square feet of building floor area. The tables show the 1980-81 actual base, type of unit, and planning criteria (e.g., asf/unit) projected for 5, 10, and 20 years and by collection acquisition and student load options. These are summarized in Section A for the 20-year projection and ranges of the multiple options.

Ellis Stack Area Projections

Table E-1 converts the Bound Volumes projected options allocated to Ellis in Table 16 into stack areas and projects growth and space requirements of other materials (serials, reference, reserve, government documents, microforms, rare books).

A CRITICAL RECOMMENDATION IS ASSUMED IN CALCULATING BOOK STACK AREAS: THE NUMBERS OF BOUND VOLUMES LOCATED IN READING ROOM OPEN STACKS AND GENERAL STACKS AT NORMAL DENSITIES WILL BE HELD CONSTANT. New acquisitions will REVOLVE into them, DISPLACING an equal number of volumes into HIGHER DENSITY STACKS. It is stressed that these are NOT "library storage" stacks; they are mostly OPEN STACKS, fully accessible to users without requiring staff retrieval (as is required in closed library storage).

Since this is a new recommendation and also is proposed for the new Law and Health Sciences libraries, the concept requires further discussion:

For Ellis, it is recommended that bookstacks in reading rooms be programmed for a constant 250,000 volumes at 10 volumes per ASF; that general stacks be programmed for a constant 750,000 volumes at the norm of nearly 15 volumes per ASF; AND THAT THE GROWTH REVOLVE INTO THE HIGH DENSITY STACKS AT 36 volumes per ASF.

Higher density stacks are NOT the COMPACT shelving in closed storage stacks that run from 40 to 60 volumes per ASF in movable shelving (which is very expensive for electrical, less expensive for manual operation). These compact stacks should be considered in the future for closed storage of rare books and old materials requiring preservation. But for the University of Missouri-Columbia libraries in the coming decade, most materials can be housed at lower operating cost of open stacks at the higher density of 36 volumes/ASF. This is achieved by spacing stack shelving in the same manner illustrated in the Mackey and Associates report, ALTERNATIVE LIBRARY SITE STUDY: University of Missouri-Columbia (October, 1980), p. 16. This shows single-face sections spaced at 28-inch aisle widths rather than 36-inch. Higher uprights are recommended to allow the normal 7-shelf section to be increased to 8 or 9 shelves. Books can average 8 volumes/linear foot in 9-shelf sections or 10 volumes/linear foot in 7-shelf sections, compared with the working density of 6 volumes/linear foot in the lower density general stacks. (Ellis now is severly oversaturated at 11 volumes/linear foot.) Book shelving initially can be at lower desirable spacing per linear foot, with growth absorbed in catalog call-number sequence for many years before periodic collection reshelving is necessary.

These higher density shelf arrangements greatly increase the CAPACITY of stacks per assignable square foot, without the user delays and potential staff operating costs of closed library storage. To incorporate this approach to higher density OPEN stack shelving AS AN INTEGRAL PART OF THE PRIMARY LIBRARY OPERATIONS IS A FAR MORE EFFICIENT SOLUTION TO ECONOMICAL BOOK HOUSING THAN THE PREVIOUSLY PROPOSED LIBRARY STORAGE PROJECT.

At the 20-year projection, the stack areas by type in Ellis are as follows:

Ellis Collection Stack Areas 20-Years

(rounded)

Stack Type/Option	Volumes /Items	Assign. Sq. Ft.
Reading Room Stacks (Constant)	250,000	25,000
General Stacks (Constant)	750,000	52,200
Other Materials Items	5,843,600	24,800
Higher Density Stacks:		
80-81 Growth Rate	1,279,200	35,700
Option T-1 Rate	1,036,400	28,900
Option T-2 Rate	1,336,400	37,300
Option T-3 Rate	1,636,400	45,700
RECOMMENDED RATE	2,328,400	62,411
Combined Collection Floor Areas:		
80-81 Growth Rate		137,700
Option T-1		130,900
Option T-2		139,300
Option T-3		147,600
RECOMMENDED		164,400

Ellis, with its share of the Library Annex, has 1,620,000 bound volumes, packed to saturation. The "normal" capacity of the estimated current 67,500 a.s.f. used for collections is about 1,000,000 volumes. In expansion and remodeling suggested in Chapter 4, the existing building could be opened up into an effective modular library for user areas, staff/service areas, and the reading room open stack and general stacks of the active collections. The early addition recommended for Ellis, followed by reconstruction of the existing self-supporting stack tiers with permanent floors, can be developed at 300-Lb. floor loading for high density stacks. These would be directly accessible to the users, both from interspersed stations and from reading rooms in the remodeled existing building.

Ellis User Area Projections

Table E-2, Appendix 3, details the projection of reader stations and special user areas for the three student load options.

From the projection of user demand in Table 17, Chapter 2B, total student reader stations projected by the ratios used in the WICHE/PMS Higher Education Facilities Planning and Management Manual 4 are recommended. From these, portions of the student reader stations are allocated to Law, Health Sciences, and the other branch libraries. The balance is assigned to Ellis. These student readers stations then are distributed by type of reader station: study tables, small carrels, research carrels, audio-visual units, and computer terminals, each with specific ASF/UNIT floor area. Computer access terminals for catalog and on-line search are increased over the 20

years. Faculty user stations are added, half for general use and half private studies for 10% of the option projected faculty FTE (compared with two percent now).

By student load options at 20-years, the following stations and floor areas are calculated:

20-Year Projected Ellis User Areas

Type	Option-1 (Constant)	Option-2 (Decrease)	Option-3 (Increase)
USER STATIONS:			
Student Readers	4,010	3,400	4,205
Computer Access	20	20	20
Faculty Studies	115	100	130
Faculty General Use	115	100	130
Total Stations	4,280	3,820	4,530
FLOOR AREAS:	Assignable Square Feet		
General Users	110,494	93,775	118,100
Computer Access	2,800	2,800	2,800
Faculty Studies	8,050	7,000	9,100
Faculty General Use	2,875	2,500	3,250
TOTAL USER AREAS	122,100	104,600	131,100

Ellis now has only 1,718 general user stations and 46 faculty library studies. Often, the reader stations are full, with students using the stairs and floor to study. Many of the reader areas are uninviting, crowded, and distractive. Creating a greatly improved user climate for study and research should be a major objective in the design of the remodeling and expansion of Ellis Library.

Projected Staff/Service Areas in Ellis

Table E-3, Appendix 3, details the projected offices, work areas, and service/support areas for the projected staff allocated to Ellis Library. Derived from Table 18 in Chapter 2B, this projection uses a single set of options: Option 1 assuming a constant student/user load and Option T-2, assuming a conservative acquisition rate of 55,000 volumes added per year (averaging 35,800 volumes added in Ellis). This projects to a collection size growing from the current 1,620,000 volumes to 1,832,700 in five years, 1,882,500 in ten years, and 2,336,400 in 20 years.

The Washington Library Budget Formula applied to these options in Table 18 generates staff growth in Ellis increased mainly by collection size for maintenance-based staff. This generates increase from 165 FTE staff now allocated to Ellis to 283 FTE staff in 20 years. However, the office units and work area and support units are largely defined by function, not precisely tied to numbers of staff. For the projected 5-year, 10-year, and 20-year development, the staff/service floor areas by category detailed in Table E-3 are summarized as follows:

Ellis Library Staff Office/Service Areas

Staff Group	5-Years	10-Years	20-years
	Assignable Square Feet		
Administration	1,570	1,570	1,570
Access Services	6,610	7,070	7,910
Reference Services	4,890	4,890	4,890
Catalog	2,820	2,820	2,820
Technical Services	11,410	11,750	12,430
Other	2,280	2,280	2,280
TOTAL STAFF/SERVICE	29,580	30,380	31,900

These projections are on the conservative side,running only 12% of the combined collection-user floor areas. A common normative allowance for staff/service area is 18% of collection-user areas in larger libraries. If acquisition rates can be brought higher toward the recommended levels, the technical processes and collection maintenance staff and space requirements will be higher. If the higher student load Option-3 is approached, the user-service staff and area will be higher.

Total Floor Area Projection Options for Ellis Library Development

Table E-4 in Appendix 3 shows the combinations of floor space projected for collections, user areas, and staff/service areas by the several alternative planning options for the 5, 10, and 20-year planning stages. Combinations of these 10 options produce 36 different outcomes in total assignable square feet. For the projected 20-year stage, Table E-4 is summarized for the lowest, middle, and highest element in each category as follows:

Total Floor Areas Projected for Ellis Library by Options

Category	Lowest	Middle	Highest
	Assignable Square Feet		
Collections	130,900	147,600	164,400
	Option T-1	Option T-3	RECOMMEND
User Areas	104,600	122,075	131,050
	Option-2	Option-1	Option 3
	Decrease	Constant	Increase
Staff/Service Areas			
20-year Opts. 1 & T-2	31,900	31,900	31,900
20-YEAR TOTALS	267,400	301,625	327,350
LESS EXISTING Ellis	157,300	157,300	157,300
20-Year ADDITIONS ASF	110,100	144,325	170,050
GROSS SQUARE FEET			
ADDITION (x1.25ASF)	137,600	180,400	212,500

These projection options indicate that the floor areas of Ellis Library should be at least doubled in the coming decade, with capacity to serve growth of collections to the Year 2000. The RECOMMENDED annual net acquisition rate for UMC libraries at 100,000 volumes per year, plus other materials, and the Option 3 shift of student loads toward higher proportions of upper division, graduate, and first professional work will require addition of over 200,000 gross square feet. This can be staged in increments of 100,000 GSF, with complete renovation of the existing building into an open modular library following the first stage addition. This assumes that the lower level of the existing Ellis Building can be fully part of the central library, with relocation of the State Historical Society of Missouri and Ellis Auditorium. If these remain, an additional 50,000 a.s.f. or 63,000 gross square feet will need to be added for the central library to provide for the projected growth of SHSM in Ellis.

SECTION B: LAW LIBRARY PROJECTIONS

Program plan projections for a new School of Law Library are detailed in Tables L-1 through L-5 in Appendix 3. Briefly summarized, they are computed for several options that will be decided in the forthcoming programming of the new Law School building development. These options used in Table L-1 are:

Law Enrollments:	Option A: 450 Law Students
	Option B: 500 Law Students
	Option C: 600 Law Students
Law Faculty:	Option D: Constant S/F 20:1
	Option E: Decrease S/F to 17:1
Student Reader Stations:	Option F: 50% of Law Students
	Option G: 65% of Law Students
	Option H: 75% of Law Students
Acquisition Rates:	Option I: 3.13% net/year
	Option J: 6000 net vols./year
	Option K: 9000 net vols./year
	Option L: 5% net/year

On Table L-2 the student size/reader station ratio options numbers are distributed by types of reader stations to compute floor areas for student reader stations. Constant reader allowances are made for 75 other university users, 25 external users, and 10 faculty library studies. The floor areas for reader facilities range from a low of 9,600 a.s.f. for 450 law students at the 50% station rate to a high of 16,100 a.s.f. for 600 students at the 75% reader station ratio.

Table L-3 projects the Law Library collection growth and floor area requirements at the four different acquisition rate options. Bound volumes are calculated by those options and other types of materials (current series, microforms, special collections, computer disks/tapes). As with the Ellis

collection stack development discussed above (page 30), IT IS ASSUMED THAT THE NEW LAW LIBRARY WILL A CONSTANT ALLOWANCE OF READING ROOMS STACKS FOR 30,000 VOLUMES at 10 volumes/ASF and 50,000 VOLUMES in general OPEN STACKS at 15 volumes/ASF; GROWTH OF BOUND VOLUMES WILL REVOLVE THROUGH THEM INTO HIGH DENSITY STACKS AT 35 VOLUMES/ASF. The bound volumes in higher density stacks will evolve from about 100,000 volumes in 5 years to a range of 189,000 to 296,500 volumes in 20 years, depending on acquisition rates. Collection floor area requirements in 20 years range from 26,300 a.s.f. to 29,300 a.s.f., depending on acquisition rates assumed.

Table L-4 projects the Law Library staffing requirements. The User Services staff varies with the Law Student Enrollment options from 11.6 to 15.5 FTE staff. Technical Services Staff varies with the acquisition rate options and resulting collection sizes, as well as the Law enrollment options. In 20 years, it ranges from 9.3 to 22.4 FTE positions. Total staffing ranges from 25.8 to 38.9 FTE positions (including hourly student assistants), reflecting the variance between 450 and 600 Law students and acquisition rates ranging from a low of 5000 volumes per year to a high of 13,400 volumes per year at the 5% rate in 20 years.

Table L-5 converts the staff projections to staff office and service areas and totals projected floor areas of the new Law Library for selected options. In summary, by the three enrollment size options, these are as follows:

Projection Law Library Floor Areas

	Assignable Square Feet		
Category Law Student Options	Option A 450	Option B 500	Option C 600
COLLECTIONS:	5-Years	10-Years	20-Years
Option I-3.13%/Yr Net Acq.	19,200	21,200	26,500
Option J-6000/Yr Net Acq.	19,350	21,350	26,300
Option K-9000/Yr Net Acq.	19,800	22,200	27,900
Option L-5%/Yr Net Acq.	19,700	22,300	29,300
READER STATIONS:	Option A	Option B	Option C
Option F 50%	9,600	10,400	11,800
Option G 65%	11,600	12,500	15,100
Option H 75%	12,900	13,900	16,100
STAFF/SERVICE AREAS:			
Option K Net Acq.	3,300	3,600	4,100
TOTAL FLOOR AREAS:			
LOWEST: Options I&F	32,100	35,200	42,400
MIDDLE: Options J&G	34,250	37,450	45,500
HIGHEST: Options K/L&H	36,000	40,000	49,500

The most likely combination appropriate for Law School Library planning appears to be Law Enrollment Option A of 450 students. Acquisition Option K of 9000 volumes added per year, reaches a 20-year level of 330,000 bound volumes in 27,900 a.s.f. (of which nearly 7,000 a.s.f. is for higher density stacks). The recommended Option H 75% seating of 450 Law Students, plus

other users, requires 12,800 a.s.f. User Floor Area. With the Staff/Service level requiring 4,100 a.s.f., the total floor area of the Law Library would be 44,900 a.s.f., about 60,000 gross square feet of building.

References: The School of Law, University of Missouri-Columbia, REPORT OF THE DEAN AND FACULTY OF LAW ON THE NEED FOR A NEW LAW BUILDING, March 1978.

William B. Ittner, Inc., CHANCELLOR'S REPORT, UNIVERSITY OF MISSOURI-COLUMBIA, SCHOOL OF LAW DEVELOPMENT OPTIONS, May 1979.

SECTION C: HEALTH SCIENCES LIBRARY PROJECTIONS

Program plan and facilities projections for the new Health Sciences Library are detailed on Tables HS-1 through HS-4 in Appendix 3. These projections deal only with the Health Sciences Library, excluding the proposed Library Storage project joined to Health Sciences Library in 1980. The consultants are recommending that the Library Storage concept be replaced by an early addition to Ellis and by providing for higher density OPEN stacks at 35-36 volumes per a.s.f. in all new library construction. (See the discussion on Ellis on page 30 and on the Law Library on page 35, above.)

Table HS-1 projects the collection growth and stack area options for the Health Sciences Library. Three acquisition rate options are shown:

Option A - Annual net acquisitions at a rate of 3.76% of the start-of-year collection size. This is the average of 13 peer medical libraries reported for 1979-80.

Option B - Net acquisition rate of 4.66% per year. This is the average of all U.S. medical school reported in 1979-80.

Option C - Net acquisiton rate of 5% per year. This is the keep-up level preferred in the UMC Health Sciences Library planning worksheets in 1980-81 and the 1978 Building Program for the New Health Sciences Library.

In 20-years, the Health Sciences collection will grow from 133,600 bound volumes in 1980-81 to nearly 280,000 bound volumes under Option A, 332,000 volumes under Option B, and 355,000 volumes under Option C.

Table HS-1 shows open stacks for 50,000 monographs increasing to 100,000 volumes and 30,000 bound serials increasing to 100,000 over the 20-year projection. The monographs are shown at 14.3 volumes/ASF and the bound serials at 10 volumes/ASF. The balance of growth evolves into higher density stacks at 35 volumes/ASF. (Note: Earlier versions of this table showed a smaller portion in the lower density open stacks. However, since much of the health sciences current material has active use up to five years, then lower rates of research use, Table HS-1 was changed to leave more of the growth in open lower density stacks.) Over the projected 20-years, between 30 and 45 percent of the collection (depending on acquisition rate) revolves into the higher density stacks. These should remain largely open-access to the user to minimize staff time for retrieval.

Table HS-2 shows the User Demand Alternatives, using the Comprehensive Plan Task 3 Options (December 1981). OPTION-1 assumes CONSTANT student loads AT ALL LEVELS. OPTION-2 assumes a 15 percent DECREASE in UNDERGRADUATE student loads with FIRST PROFESSIONAL (including their graduate programs) remaining CONSTANT. OPTION-3 assumes that LOWER DIVISION student loads will DECREASE 17 per cent, UPPER DIVISION loads will INCREASE 8 percent, and GRADUATE and FIRST PROFESSIONAL loads will INCREASE by 46 percent. (See Chapter 2, Section B, page 26.)

For the Health Sciences (School of Medicine, School of Nursing, Health Related Professions), Option-1 continues 1,198 FTE students; Option-2 projects 1,108 FTES in 20 years; Option-3 increases to 1,500 FTES in the Health Sciences. Assuming that 25 percent of the FTE students are provided reader stations, the options generate 300, 277, and 375 students reader stations, respectively.

To the student reader stations, additional stations are for faculty and professional staff of Medicine, Nursing, and HRP plus the House Staff of the Hospitals and Clinics. This brings total reader stations to 455 for Option-1, 440 for Option-2, and a high of 550 for growth Option-3. These are lower than the 700 reader stations proposed in earlier Health Sciences Library studies, but the new projections provide a reasonable 25 percent reader station allowance for FTE (rather than headcount) students, for 25 percent of faculty and professional staff, and for 10 percent of the House Staff.

On Table H-3 (with two pages) detail is projected for staff office and work station areas. These largely follow earlier studies provided by the Health Sciences library director. This table includes several kinds of SPECIAL USER stations that require staff supervision and assistance. These are the catalog computer terminals, interlibrary TWX terminals, on-line search terminals, and all of the Multimedia Center including 70 audiovisual study stations. Many of these staff/service areas are held constant through the 20-years for all options. However, the numbers of computer-terminal stations increase substantially in number over time. Under Technical Services, Acquisitions and Cataloging staff requirements are weighted according to the three acquisition rate options and resulting collection maintenance growth.

Table HS-4 is a Summary of Floor Area Options for Health Sciences Library. (At the head of Table HS-4 are the earlier User Area calculations.) In abbreviated form at the 20-year, projection levels these floor area options are as follows:

Health Sciences Library Floor Area Options

Categories	Enrollment Options		
Acquisition Options:	Option-1 Option A	Option-2 Option B	Option-3 Option C
TOTAL USER AREAS	15,330	15,400	18,100
COLLECTION AREAS	19,500	21,000	21,600
STAFF/SERVICE AREAS	11,240	11,660	11,800
TOTAL FLOOR AREA ASF:	46,070	48,060	51,500
GROSS SQUARE FEET (x1.25)	57,600	60,100	64,400

In 1978, three "priority" alternatives were considered for fund-raising feasibility toward the Health Sciences Library. (Unsigned table from University of Missouri Medical Center, March 8, 1978.) Based on calculations by Medical Planning Associates, Priority 1 was a low option for 38,684 gross square feet, Priority 2 for 51,943 gross square feet, and Priority 3 for 67,789 gross square feet. Apparently, Priority 2 was selected as the feasible level for fund-raising. This size of 52,000 gross square feet appears to have been adopted into subsequent capital item requests for State portions of the funding.

The consultants find that the Medical Planning Associates based stack calculations on 100,000 volumes, 135,000 volumes, and 170,000 volumes in the three "priorities." THE HEALTH SCIENCES LIBRARY NOW HAS NEARLY 135,000 BOUND VOLUMES. THIS LEAVES NO ALLOWANCE FOR GROWTH UNDER THE SELECTED PRIORITY 2. At the same time, MPA used the generous 10 volumes/ASF to calculate stack floor area—a value for open reading room stacks allowing for other unspecified materials. If the Health Sciences Library is to grow even at the lowest rate, it will need provide for nearly 300,000 volumes in 20 years. The MPA Priority 3 assumption of 170,000 volumes will be reached in FIVE YEARS under the 5% acquisition PREFERRED by the Health Science Center.

The Sasaki/Mackey/MIRA/Martin team RECOMMENDS THAT THE HEALTH SCIENCES LIBRARY BE PLANNED FOR AT LEAST 48,000 ASSIGNABLE SQUARE FEET IN 60,000 GROSS SQUARE FEET OF BUILDING.

SECTION D: TENTATIVE PROJECTIONS: STATE HISTORICAL SOCIETY OF MISSOURI

This section provides preliminary projections of the collections, reader-user demand, and staff and related assignable floor area requirements of the State Historical Society of Missouri at the University of Missouri-Columbia.

From the 1980-81 base year, projections are staged at five, ten, and twenty years (presumably to 1985-86, 1990-91, and 2000-01).

The base-year data are derived from the consultants' interview on November 6, 1981, with Dr. Richard S. Brownlee, Director and Secretary of the State Historical Society, from the pamphlet "Your State Historical Society" (February 1981), and from tentative estimates by the author, Thomas R. Mason.

Tables H-1 through H-3 in Appendix 3 are designed to clearly state the actual and estimated quantities, the assumptions on which projections are made, and the unit floor area criteria used in the calculations. This is to permit the SHSM officers and staff to correct or revise the estimates and to apply alternative assumptions and floor area criteria in the projections.

A key assumption used in the projections is that

> PATRON CONTACTS AND READER-USER LOADS WILL INCREASE AT AN AVERAGE OF TWO PER CENT PER YEAR (0.02) OVER THE FIVE, TEN AND TWENTY YEARS PROJECTED.

This is purely a tentative estimate, based on indicators in the information available to the author about the Society and on the assumption that user demand on the Society collections and staff will increase as a function of the rising median age of the population accompanied by associated growth of interest in individual origins and history of the State.

The unit floor area criteria are from Manual Four, Academic Support Facilities, in the HIGHER EDUCATION FACILITIES PLANNING AND MANAGEMENT MANUALS (WICHE-PMS, now NCHEMS, 1971), pp. 60-63. These are based largely on the standard work of Keyes D. Metcalf, PLANNING ACADEMIC RESEARCH LIBRARY BUILDINGS (1965) and on the University of California Planning Guide for Libraries (1968). Assignable Square Feet (ASF) are the interior dimensions of usable rooms, excluding corridors, stairs, wall areas, toilets, mechanical and other gross building areas.

The projections are in three tables in Appendix 3:

Table H-1 Projections of Collections and Floor Area Requirements;
Table H-2 Projections of Reader/User Stations and Floor Areas; and
Table H-3 Projections of Staff Office and Work Station Areas.

These are summarized on the following pages:

1. Collections

On Table H-1, collections are divided between bound volumes, newspapers, manuscripts-records, special collections (rare books), and the art collection. Bound volumes use the base of 429,000 volumes reported by the SHSM Director, rounded to 430,000 volumes for the end-of-year estimated count. Director Brownlee indicated a growth of 1000 to 3000 volumes per year; the assumption used is a mid-point 2000 volumes per year. For projections, the bound volumes are divided into three types of stacks—the open-reading room shelving at 12 volumes per assignable square foot (ASF); general stacks at 15 volumes per ASF; and high-density stacks for less active material at 35 volumes per ASF. The assumption is that about half the SHSM collection can be housed in the higher density stacks (as illustrated in Mackey and Associates, ALTERNATIVE LIBRARY SITE STUDY-University of Missouri Columbia, October 1980.) It is assumed that the reading room shelved books will rotate new books in and older books out to general and high density stacks.

The newspaper collection assumes continuation of the 323 current titles received (48 dailies and 275 weeklies). Current issues are in display shelving in the reading room. As they are moved out from there they rotate into the boxed shelving or bound newspapers. These are held constant on the assumption that they rotate out into microfilm at a rate of 782 reels per year. Microform cases hold 400 reels and require 42 ASF per case. The current newspaper microform count is given at 38,712 reels (combining 35mm. and 16mm. reels). All of the growth of newspaper collection floor area is assumed to be from rotation into microform.

Manuscripts are grouped with State archive documents, maps, and pictorial collections. The manuscript collection housed at UMC is assumed to grow at 100 linear feet of shelving per year and 50 added microform reels (others being housed at St. Louis, Rolla, or Kansas City campuses in the joint collection of the University and the Society).

The special collection rare books are estimated by the consultant at 8,000 bound volumes, growing at 100 per year. Other special collection items are not yet identified (NA).

The art collection is divided between the exhibit gallery assuming 60 hanging spaces with rotating content; painting storage in double-depth stack sections; and prints, drawings, etc. in single-face stack sections holding 500 items each.

The projected growth of floor area holding collections using these assumptions is 33,170 ASF in five years going to 36,147 in 20 years. This is very moderate expansion, largely based on the assumption that much of the growth trades off into microforms or high density stacks. However, this is a substantial increase over the current 16,800 ASF in closed stacks and an estimated 4,500 ASF holding collections in open stack-reading rooms assigned to SHSM in Ellis, a current total of 21,300 ASF.

In converting these projections to spatial design, some elements of collection space will be joined with reader station and user service areas.

2. Reader Facilities

Table H-2 first projects the numbers of reader stations associated with different categories of collections. The projected reader demand is based on the assumption of a two percent annual increase of total patron contacts. The 1980-81 base of 136 stations (with an estimated distribution among types) is multiplied by 1.1 for the five-year projection, 1.2 for ten-year; and 1.4 for 20-year. The number of reader stations reaches 190 in 20 years.

According to the assumed mix of station type, the reader floor areas are projected, growing to 4,488 ASF in five years and 5,700 ASF in 20 years. In actual implementation, the ten-year figure of 4,900 ASF for readers may be used for the initial development stage, with further growth dependent on actual experience.

3. User Services

Areas for user service work stations and catalog files-indexes-terminal are grouped with reader areas on Table H-2. User services project to 1,300 ASF in five years, 1,500 ASF in ten years, and nearly 1,900 ASF in 20 years.

The combined total for reader stations and user service areas grows from nearly 5,800 ASF in five years to nearly 7,600 ASF in 20 years. (Note: the numbers in the tables appear precise from the computer model calculations, but they can be rounded to the nearest 100 ASF in most cases.)

Combination of the Collection areas from Table H-1 with the Reader/User areas on Table H-2 total nearly 39,000 ASF in five years, 40,500 ASF in ten years, and 43,700 ASF in 20 years.

4. Staff Offices

Table H-3 projects staff office and work station requirements. These are the generally nonpublic areas in addition to the User Service areas projected above. Where staff growth is likely, it is projected on the same basis as the assumed growth of patron contacts, averaging a two-percent annual increase. This increase is projected as an increase in assigable area but would actually be provided at either the 10- or 20-year projected level to allow for moderate increases in staff related to projected increase in patron contacts. The totals for five years to 3,800 ASF in 20 years.

TOTAL PROJECTED AREAS (tentative)

At the end of Table H-3, the projected floor areas for collections, reader stations, user service stations, and staff offices total 42,200 ASF in five years, 44,000 ASF in ten years; and 47,500 ASF in twenty years to house the State Historical Society of Missouri on the UMC campus. The 20-year projection is nearly 16,900 ASF more than currently assigned to SHSM in Ellis Library, a 55-percent increase. Compare this with the 13,000 square feet additional space proposed in the Library Storage building.

This preliminary projection, subject to revision by the SHSM staff, provides an order-of-magnitude estimate of how much building space the Society should have, given the relatively generous assumptions and criteria used in this preliminary assessment.

Assuming the 20-year projection of 47,500 assignable square feet, this would require a new building element of about 60-63,000 gross square feet (up to $5 million new construction cost).

Alternatives for relocating the State Historical Society from its present site in Ellis Library are discussed below.

ALTERNATIVES FOR HOUSING THE STATE HISTORICAL SOCIETY

Among the possible alternatives for housing the Missouri State Historical Society, the following options may be considered:

1. Leave the SHSM where it is in Ellis. Allow for additional space to house collection growth in high density stacks as part of other new library construction (e.g., Law Library, Health Sciences Library, Health Sciences-Library Storage combination, additions to Ellis).

2. Add the total projected SHSM space requirement to programming other library projects (e.g., Law, Health Sciences, Ellis addition).

3. Build a separate new building for the State Historical Society on or near the campus.

4. Relocate the principal quarters of the State Historical Society to another building after remodeling. Examples:

   TATE Hall when the new Law building is completed.

   LOWRY Hall with an addition to the north.

   The former Laboratory School if alternatives are found for Education.

   A Francis Quadrangle building (such as Sociology or the old main Engineering Building) if alternatives for its occupants can be developed.

Among these alternatives, most visible is to relocate central elements of the State Historical Society to Tate Hall when the new Law School building is complete. Tate now has 28,500 assignable square feet, substantially cut-up, which could be increased with remodeling to about 35,000 ASF. With additional high-density stack storage in one of the other library projects, this could centrally accommodate the Society headquarters and active collections. The existing Law library, with improvement, provides an excellent site for the SHSM reader-active collection resources, and much of the rest of the building can be opened up to house special collections, reader facilities, offices, and work areas.

Lowry Hall, now being modernized for interim use by Law, can accommodate the central core of the Society, with an addition on the north providing for stack and reader areas.

The other alternatives depend heavily on relocation of current tenants that will require additional study or on capital financing of additional new construction to house the Society.

The consultants recommend that, after further revision of the SMSH building space projections in consultation with the Society staff and board, a target option be jointly agreed by the University and the Society.

At this point, choice among the alternatives clearly requires time for consultation, deliberation, and study that is beyond the immediate scope and schedule of the consultants' Library Program Planning study.

Libraries of the University of Missouri-Columbia:

Chapter 4

CAPITAL DEVELOPMENT STAGING FOR LIBRARY FACILITIES

Several approaches may be taken toward development of a coordinated, staged capital development program to achieve the vital improvements of library facilities on the University of Missouri Columbia Campus.

The Evaluation of Current Conditions in Chapter 1, the Comparison with Peer Libraries in Chapter 2A, the Projection of UMC Library Program Development in Chapter 2B, and the Library Facilities Projections in Chapter 3 identify a number of alternative planning policy decisions and program option ranges from which choices may be made. In the context of parallel work on the Comprehensive Planning study, the following projects emerge as relatively firm in terms of University capital funding objectives:

1. Construct a new Health Sciences Library immediately north of the Medical School and west of the School of Nursing on the site of the temporary buildings. The consultants recommendation is that this should be at least a 80,000 gross square foot building for the new Health Sciences Library.

2. Construct a new School of Law building, containing a new Law Library of at least 60,000 gross square feet. Options reviewed in Chapter 3 Section B can be selected in the Law project program planning and design studies about to begin.

3. Construct through remodeling a solution for the immediate crisis of saturated library stack space. The consultants have recommended that the gymnasium in the old Laboratory School (now the Education Building) be converted to a bi-level self-supporting stack area. The University now is doing design feasibility studies for this space. It can continue in library stack use, either to house the College of Education Instructional Materials Center or as a location for Engineering and/or other branch library, after the immediate book housing crisis is relieved with new construction.

4. Construct more immediate relief for the shortage of reader stations in Ellis by converting the Ellis Auditorium to the Reserve Library and reading room (which can be open on a 24-hour basis, if desired). This will require relocating over 35 weekly hours of scheduled use of Ellis Auditorium to other larger lecture halls. This will be studied in the next few months as part of the classroom program planning study to be jointly conducted by the consultants and the UMC staff.

Next steps are contingent on several kinds of policy decisions that have emerged in this study. Most immediate is further work with the State Historical Society of Missouri toward its location, outside of Ellis, as recommended by the consultants, or in space to be added to Ellis. Decision on the location of the SHSM to a new site will generate the following projects:

5. Construct and/or remodel the selected facility for the State Historical Society of Missouri. For the projected growth of SHSM, the estimated space projected 20 years is 47,500 a.s.f. (60-63,000 gross square feet if new construction).

6. Begin remodeling of the Lower Level of Ellis Building for its conversion to use by the Library, probably for Technical Services. This also will permit expansion of the Reserve Library-24 hour reading room proposed in Ellis Auditorium into the southwest corner now assigned to SHSM.

7. Construct a Stage-1 addition to the Ellis building. As noted in Chapter 3, Section A (pp. 33-34), Ellis should be expanded in the range of 110,000-170,000 a.s.f., 138,000-212,500 gross square feet. This can be done in two construction/funding stages of about 100,000 gross square feet each. (If SHSM and Ellis Auditorium remain in Ellis, the additions would be increased by 50,000 a.s.f.)

8. When the Stage-1 addition to Ellis is completed, begin extensive remodeling of the existing building. By relocating books now in the self-supporting stack tiers to the new addition and other areas of Ellis, the old stack tiers SHOULD BE GUTTED. The self-supporting, exposed steel structure of the stack-tier uprights IS the existing structure of the tiers. It is a high-risk fire hazard, since it vents through the tier floors at the uprights and would buckle and collapse from fire heat at the lower levels. New solid-structure 300-Lb. floors will replace the stack tiers, linking to existing floors and (as appropriate in design) floors of the additions.

9. When the stack tier replacement is completed, begin staged remodeling of the rest of Ellis Library, opening up the floor space as much as possible to gain usable floor area in place of many interior walls and corridors. The aim of the Ellis Library renovation design should be toward what came to be called a "modular" library. (One of the best examples is the Olin Library at Washington University, St. Louis.) Books, readers, and direct user service stations can become interchangeable in a modular library, permitting low-cost rearrangement as operating needs change. This will depend, in part, on the floor loading capabilities of the existing building sectors. A major remodeling of the main floor center is needed, to create a welcoming public space and immediate identification of user services.

10. Depending on rates of collection growth, changes in user demand loads, and the rates at which new library technologies, including electromagnetic memory information banks and network pools, are happening, Stage-2 addition to Ellis should be implemented about 1990.

By 1990, projections of change and growth beyond the Year 2000 will likely emerge. Only general forecasts of Stage-2 programming can be made now, that is to provide additional collection housing and user services at least to the projected 20-year levels to provide capacity to the beginning of the 21st Century.

Over the coming year, the additional program planning studies being scheduled will clarify further changes for the other branch libraries. The first, a study of the College of Engineering to be completed in March, will identify the options for replacing the existing Engineering Library. In Chapter 28 (page 38), the consultants recommended that the Mathematical Sciences Library be relocated to Ellis when the Stage-1 addition is completed. An alternative will be to rejoin Mathematical Sciences with Engineering Library in its redevelopment. The Geology Library may also be integrated appropriately with Engineering. The Journalism Library appears to be near saturation and needs more reader space. Journalism is scheduled later in 1982 for program planning study. The Veterinary Medicine Library is in excellent shape now, but it will need expansion within the coming decade. It is scheduled for study later in 1982.

Wherever possible and appropriate, branch libraries should be joined in one commonly useful location to reduce staffing and materials duplication requirements. Ideally, these should be relocated into the expanded Ellis when possible and acceptable to their users.

The key to great improvement of Library resources at the University of Missouri-Columbia, the consultants are convinced, is a major expansion and complete remodeling and renovation of Ellis Library. Its ideal location, as well as its increasingly vital function for a learning community in The Information Society, truly make THE LIBRARY the heart of the University.

Libraries of the University of Missouri-Columbia:
LIBRARY EVALUATION AND FACILITIES PROGRAM PLAN

THE SASAKI/MACKEY/MIRA/MARTIN TEAM
December 1981

LIST OF REFERENCES: BIBLIOGRAPHY

REFERENCES

Association of College and Research Libraries. "Standards for College Libraries," COLLEGE AND RESEARCH LIBRARIES NEWS, 36:5 (No. 9, October 1975): 277-301.

Association of College and Research Libraries and Association of Research Libraries. "Standards for University Libraries," COLLEGE AND RESEARCH LIBRARIES NEWS, 40:4 (April 1979): 101-111.

Association of Research Libraries. ARL STATISTICS: 1979-80. Washington, D.C.: Association of Research Libraries, 1980.

Association of Research Libraries. CUMULATED ARL UNIVERSITY LIBRARY STATISTICS: 1962-63 THROUGH 1978-79. Washington, D.C.: Association of Research Libraries, 1981.

H. William Axford. "Approach to Performance Budgeting at the Florida Atlantic University Library." COLLEGE AND RESEARCH LIBRARIES, March 1971, pp. 87-104.

Becker & Flowers, Architects. "Analysis of Ellis Library" December 21, 1979 (Evaluation of handicapped exit and general building code conformance).

California, University of. PLANNING GUIDE FOR LIBRARIES: UNIT AREA ALLOWANCES. Berkeley, CA: Office of the President, University of California (May 24, 1968).

Council on Library Resources. ANNUAL REPORT, 1959, p. 7 on historic growth of library materials.

Verner W. Clapp and Robert T. Jordan. "Quantitative Criteria for Adequacy of Academic Library Collections," COLLEGE AND RESEARCH LIBRARIES, 26 (September 1965): 371-380.

Denis J. Curry and Interinstitutional Committee of Business Officers. MODEL BUDGET ANALYSIS SYSTEM FOR PROGRAM 05, LIBRARIES. Olympia, WA: Office of Interinstitutional Business Studies (Washington Public Four-Year Colleges and Universities) October 1968.

Harold L. Dahnke, Dennis P. Jones, Thomas R. Mason, Leonard C. Romney. HIGHER EDUCATION FACILITIES PLANNING AND MANAGEMENT MANUALS, Manual Four, Academic Support Facilities. Boulder, CO: Planning and Management Systems Division, Western Interstate Commission for Higher Education (now National Center for Higher Education Management Systems), Technical Report 17-4, May 1971.

June LaFollette DeWeese. THE HISTORY OF THE LIBRARY, UNIVERSITY OF MISSOURI-COLUMBIA, 1928-1946. Columbia, MO: Elmer Ellis Library, University of Missouri Columbia, 1980.

Robert B. Downs and John W. Heussman. "Standards for University Libraries." COLLEGE AND RESEARCH LIBRARIES, January 1970, pp. 28-35.

Ralph E. Ellsworth. "Academic Library Buildings in the United States." ADVANCES IN LIBRARIANSHIP, 3 (1971): 119-136.

Ralph E. Ellsworth. THE ECONOMICS OF BOOKS STORAGE. Metuchen, NJ: Scarecrow Press, 1969.

Ralph E. Ellsworth. PLANNING THE COLLEGE AND UNIVERSITY LIBRARY BUILDING. Boulder, CO: Pruett Press, 1968.

John H. Gribbin. "1982-83 Appropriations Request for Program Improvements and Capital Items, UMC Libraries," to Space Committee, February 11, 1981.

John H. Gribbin. "Planning for UMC Libraries," memorandum to George R. Preckshot, Chairperson, Campus Planning Committee, February 13, 1981.

John H. Gribbin and Dean Schmidt. PROGRAM FOR A COMBINED HEALTH SCIENCES LIBRARY-STORAGE FACILITY. Columbia, MO: University of Missouri-Columbia Libraries (1st Draft, May 1, 1981).

Gretchen L. Heffan, "A Survey of Departmental Libraries, University of Missouri-Columbia, 1980," survey report by Graduate Assistant, School of Library and Informational Science, University of Missouri-Columbia, August 1980.

Mackey and Associates. ALTERNATIVE LIBRARY SITE STUDY: UNIVERSITY OF MISSOURI-COLUMBIA. St. Louis, MO: Mackey and Associates, Architects/Planners, October 21, 1980.

Mantel & Teter, Architects Inc. "Ellis Library Analysis, University of Missouri Columbia for the Board of Curators," June 30, 1977 (building code conformance evalution and handicapped mobility).

R. Marvin McInnis. "The Formula Approach to Library Size: An Empirical Study of its Efficacy in Evaluating Research Libraries." COLLEGE AND RESEARCH LIBRARIES, May 1972, pp. 190-198.

Medical Planning Associates. "Health Sciences Library/Learning Resources Center" in University of Missouri Medical School 1981-82 Program Decision Item Analysis, March 1978.

Keyes D. Metcalf. PLANNING ACADEMIC RESEARCH LIBRARY BUILDINGS. New York: McGraw-Hill, 1965.

Missouri, University of. ANNUAL REPORT OF THE UNIVERSITY OF MISSOURI-COLUMBIA LIBRARIES for FY 1978-79, 1979-80, and 1980-81.

Missouri, University of. Office of Institutional Research and Planning, Columbia Campus: Varied reports and printouts of Building Space Inventory, Fall 1980 student credit hour loads, 1980-81 payroll counts, FTE faculty.

Missouri, University of. Office of Library Studies, Office of the Vice President for Academic Affairs, working papers published in 1976:
David T. Hamilton. "Surveys of University of Missouri Library Faculty and Student Users."
Kenneth A. LaBudde. "Comparisons of University of Missouri Libraries with Others."
Robert C. Miller. "Automation and the University of Missouri Libraries."
S. Craig Moore. "Aims and Functions of University of Missouri Libraries."
S. Craig Moore. "University of Missouri Library Space."
S. Craig Moore. "Some Analyses of the University of Missouri Library Collections."
S. Craig Moore. "Some Analyses of University of Missouri Library Costs."
T. Philip Tompkins. "On-Line Bibliographic Data Base Search and the University of Missouri Libraries."

Missouri, University of, Committee on Library Resources. "The University Libraries Now: A Report of Recommendations for Library Development and a Summary of Current Status" (April 1977).

Missouri, University of. EVALUATION OF ACADEMIC PROGRAM SPACE REQUIREMENTS: HEALTH SCIENCES CENTER, UNIVERSITY OF MISSOURI-COLUMBIA. Kansas City, MO: Health Facilities Planning Associates, April 28, 1981.

Missouri, University of. LIBRARY STORAGE FACILITY, University of Missouri-Columbia. St. Louis: SRT Architects/Planners, December 1978.

Derek J. Price, "The Exponential Curve of Science." DISCOVERY, June 1956.

Duane L Stucky and Richard H. Zimmerman. "Comparative Library Expenditures: Columbus Campus, The Ohio State University (Columbus, Ohio: Office of Planning Studies, Report to President Enarson, May 8, 1974).

Washington, State of, Council for Postsecondary Education. THE FORMULA MANUAL: INSTRUCTION, LIBRARY, STUDENT SERVICES, PLANT OPERATION & MAINTENANCE. Olympia, WA: Council for Postsecondary Education, Report 81-1, July 1980, esp. pp. 33-74 and 183-217.

Libraries of the University of Missouri-Columbia:
LIBRARY EVALUATION AND FACILITIES PROGRAM PLAN

THE SASAKI/MACKEY/MIRA/MARTIN TEAM
December 1981

APPENDIX 1

Chapter 1

Tables 1 through 8

EVALUATION OF CURRENT CONDITIONS

TABLE 1

UNIVERSITY OF MISSOURI-COLUMBIA
EVALUATION AND PROGRAM PLANNING OF LIBRARY DEVELOPMENT

SUMMARY OF EXISTING LIBRARY BUILDING SPACE

BUILDING	ASSIGNABLE SQUARE FEET BY USE						TOTAL ASSNGBL SQ. FT.
	READING/ STUDY (410)	STACK (420)	OPEN STK/ READING (430)	PROCESSING/SERV. (440+455)	OFFICE (300S)	ALL OTHER ROOM USE TYPES	
TOTAL ELLIS BLDG.	32293	74996	14447	15109	14152	6279	157276
CLASSROOM POOL						2689	2689
MO.ST.HIST.SOC.		18767	9569		2761	2368	31485
LIBRARY ADMINIS.	32293	56229	4878	15109	11391	1222	123122
ENGINEERING LIBR.	1334	2101		131	373	90	4029
GEOLOGY LIBRARY	974	1631		114	76		2795
HEALTH SCI. LIBR.	3240	7576	668	1332	204		13020
JOURNALISM LIBRARY	1939	641	856		359		3795
LAW LIBRARY, TATE	3063	8874		263	416		12416
LIBRARY ANNEX	703	9091			167	144	10105
MATH SCIENCES LIBR	721	950			217		1888
DALTON RESRCH CNTR	391	299		322	165		1177
VETERINARY MED.LIB	4202	2257		581	447		7487
TOTAL LIBR ADMIN	48860	91449	6402	17852	13815	1456	179834
TOTAL INCL.MSHS	48860	108216	15971	17852	16576	3824	211299

(TABLE CONTINUED>)

TABLE 1 (CONTINUED)
SUMMARY OF EXISTING LIBRARY BUILDING SPACE
DEPARTMENTAL READING ROOMS

BUILDING	ASSIGNABLE SQUARE FEET BY USE: READING/ STUDY (410)	STACK (420)	OPEN STK/ READING (430)	PROCESS-ING/SERV. (440+455)	OFFICE (300S)	ALL OTHER ROOM USE TYPES	TOTAL ASSNGBL. SQ. FT.
DEPARTMENT RDG.RMS							
AGRIC. LAB. 41	135						135
ENGLISH A&S 312			305				305
B&PA MIDLEB. 134	875						875
NAVAL SCI.CRW210				252			252
AGRON. CRTS 207	473						473
ED311 INST.MATER			2482				2482
GEOL.10 MAP LIBR			767				767
JESSE 404E MEDIA	132						132
PSYCH.MCAL.108A	269						269
AG.ECON MUM217			776				776
GEOG. STEW 9	378						378
CHLD DEV.STN 45	102						102
PHYSICS 218,223A			1044	497			1541
ANTHRO SWLW 212A	477						477
ANTHRO SWIT 13		232					232
VET CLINIC 221-3	800						800
GENTRY 4,113,215	670						670
MUSIC F.A.223,22				144			144
JESSE AUD 49 BND				453			453
BIO SCI TUCK 218			541				541
AN SCI RES 168	345						345
CHEMISTRY 125		3160		77			3237
PUB SAF WATS.307			148				148
ATMOS SC 701HITT	406						406
ST.DEV.823 VIRGN	141						141
SP.ED.MAT.CTR.14			627				627
SUBTOT COL.CMPS UM & HOSP:	5203	3392	6690	1423	0	0	16708
RESP.TH.CLRK 303			207				207
PUB&CS CLRK 642	129						129
PUB&CS CLRK 737	421						421
RADIOL HOSP N219			198				198
SURGRY HOSP N321			261				261
ANESTH HOSP W349			348				348
MED ADM HSP N409			266				266
OB/GYN HOSP N608			399				399
CHLD H HOSP N722			435				435
BEH.SC TD3 107+			861				861
PH&R RUSK 011			836	44			880
SUBTOT UM &HOSP	550	0	3811	44	0	0	4405
SUBTOTAL DEPT.RR'S	5753	3392	10501	1467	0	0	21113
TOTALS UNIV.LIBR & DEPARTM.RDG.ROOMS	54613	111608	26472	19319	16576	3824	200947
RESIDENT.LIFE-95 READING/STUDY RMS.	40749						40749
TOTAL LIBR&STUDY	95362	111608	26472	18319	16576	3824	241696
ROOMS DELETED FROM 7/15/81 COMPUTER LISTING OF LIBRARY SPACE INCL.MSHS							33861
CONTROL TOTAL							275557

TABLE 2

UNIVERSITY OF MISSOURI-COLUMBIA
EVALUATION AND PROGRAM PLANNING OF LIBRARY DEVELOPMENT

SUMMARY OF EXISTING LIBRARY HOLDINGS - 1978-79 THRU 1980-81

LIBRARY UNIT	1978-1979		1979-1980		1980-1981		CHANGE NO.VOLS.
	NO.OF VOLUMES	SERIAL TITLES	NO.OF VOLUMES	SERIAL TITLES	NO.OF VOLUMES	SERIAL TITLES	1980-81/ 1978-79
ELLIS LIBRARY	1548828	14955	1584678	15041	1620196	15671	71368
ENGINEERING LIBR.	52750	536	53489	541	54977	536	2227
GEOLOGY LIBRARY	34519	289	35155	294	35926	288	1407
HEALTH SCI. LIBR.	124475	1867	128854	1877	133640	1848	9165
JOURNALISM LIBRARY	18527	368	18818	355	19158	393	631
LAW LIBRARY, TATE	155808	1091	142675	1534	149003	1545	-6805
LIBRARY ANNEX *	(275000)	0	(275000)	0	(275000)	0	
MATH SCIENCES LIBR	21318	373	22486	376	23875	364	2559
DALTON RESRCH CNTR	2483	60	2541	57	2585	62	92
VETERINARY MED.LIB	25916	648	27971	672	29428	672	3512
TOTAL UNIVERSITY HOLDINGS,VOLUMES	1984632	20187	2016647	20747	2066788	21379	84156
NET INCREASE IN VOLUMES-->		32015	-->	52141			
SPECIAL MATERIALS:(PIECES)							
MICROFORMS	2040615		2209010		2328526		287911
PHONORECORDINGS	8698	(6275 TITLES)	9831	(7346 TITLES)	10356	(7731 TITLES)	1658
GOV.DOCS.UNACCSN	129740		147135		164497		34757

*VOLUMES IN LIBRARY ANNEX "ON LOAN" FROM OTHER UNITS, COUNTED IN THAT UNIT, NOT IN TOTAL.

TABLE 3

UNIVERSITY OF MISSOURI-COLUMBIA
EVALUATION AND PROGRAM PLANNING OF LIBRARY DEVELOPMENT

READER STATIONS AVAILABLE IN UMC LIBRARIES IN 1981

NUMBERS OF READER STATIONS BY ROOM USE/TYPE

LIBRARY UNIT	READING/ STUDY TABLES	SMALL CARRELS	RESEARCH CARRELS	MICROF. AUDIO/ VISUAL	LOUNGES & OTHER	FACULTY STUDIES	TOTAL READER STATIONS
ELLIS LIBRARY	1388	202	79	28	43	46	1784
MO ST.HIST.SOC.	102	9	0	25	0	0	136
TOTAL ELLIS BLDG.	1489	211	79	53	43	46	1900
ENGINEERING LIBR.	99	0	0	5	1	0	105
GEOLOGY LIBRARY	50	2	0	2	0	0	54
HEALTH SCI. LIBR.	77	10	0	1	23	0	111
JOURNALISM LIBRARY	80	1	0	1	5	0	87
LAW LIBRARY, TATE	98	2	120	2	3	0	223
LIBRARY ANNEX	10	0	0	0	0	0	10
MATH SCIENCES LIBR	18	4	0	1	4	0	27
DALTON RESRCH CNTR	0	8	0	2	3	0	13
VETERINARY MED.LIB	110	6	0	24	6	0	146
TOTAL UNIVERSITY LIBRARY ADMINIS.	2008	244	199	91	88	46	2676

ESTIMATED READER STATION CAPACITY IN NONLIBRARY READING/STUDY ROOMS (A.S.F. LESS LESS 25% ALLOC.TO BOOKS & SERVICE DIVIDED BY 30 A.S.F./READER STATION):

DEPARTMENTAL READING ROOMS:	TOTAL ASSIGNABLE SQUARE FEET:	21113	
	LESS 25% BOOKS,SERVICE:	-5278	
	EST. READER A.S.F.:	15835	
	ESTIMATED READER STATION CAPACITY (@ 30ASF)=		528
RESIDENCE HALLS READING/STUDY ROOMS:	TOTAL A.S.F.	40749	
COMBINED TOTAL READER STATIONS	LESS 25% BOOKS,SERVICE:	-10187	
	EST. READER A.S.F.:	30562	
	ESTIMATED READER STATION CAPACITY (@ 30ASF)=		1019
ESTIMATED NONLIBRARY READER/STUDY STATIONS:			1547
COMBINED LIBRARY READER STATIONS & EST. NONLIBRARY READER CAPACITY:			4223

TABLE 4

UNIVERSITY OF MISSOURI-COLUMBIA
EVALUATION AND PROGRAM PLANNING OF LIBRARY DEVELOPMENT

NUMBERS OF LIBRARY STAFF FTE POSITIONS

LIBRARY UNIT	1978-1979 PROFESSIONAL FTE	1978-1979 SUPPORT STAFF FTE	1979-1980 PROFESSIONAL FTE	1979-1980 SUPPORT STAFF FTE	1980-1981 PROFESSIONAL FTE	1980-1981 SUPPORT STAFF FTE	CHANGE 1980-81 OVER 1979-80 TOTAL FTE
ELLIS LIBRARY	41	88	41	93	41	98.5	5.5
ENGINEERING LIBR.	1	2	1	2	1	2	0
GEOLOGY LIBRARY	0	1	0	1	0	1.5	.5
HEALTH SCI. LIBR.	5	4.5	7	6.5	7	5.5	3
JOURNALISM LIBRARY	2	2	2	2	2	2	0
LAW LIBRARY, TATE	3	3	5	4	5	5	4
LIBRARY ANNEX	1	0	0	1	0	1	0
MATH SCIENCES LIBR	0	0	0	1	0	1.5	1.5
DALTON RESRCH CNTR	1	0	1	0	1	0	0
VETERINARY MED.LIB	1	2	1	2	1	2	0
TOTAL UNIVERSITY LIBRARY PROFES. & SUPPORT FTE	55	107.5	58	112.5	58	119	14.5
* $ HOURLY WAGES COMBINED UNITS		215306		258902		327899	112593
* EST.HOURLY FTE ($/MIN WAGE*40) /(52 WEEKS)	($120)	34.50	($124)	40.15	($134)	47.06	12.55
TOTAL STAFF FTE		197.00		210.65		224.06	27.05

* HOURLY WAGES EXPENDITURES INCLUDE WORK-STUDY STUDENTS PAID FROM FEDERAL AND OTHER FUNDS OUTSIDE LIBRARY BUDGET. ESTIMATE OF FULL-TIME EQUIVALENT FOR HOURLY ASSUMES MINIMUM WAGE RATE ($2.80 IN 1979, $3.10 IN 1980, AND $3.35 IN 1981) TIMES 40 HOUR WEEK DIVIDED BY 52 WEEK YEAR.

TABLE 5

UNIVERSITY OF MISSOURI-COLUMBIA
EVALUATION AND PROGRAM PLANNING OF LIBRARY DEVELOPMENT

LIBRARY EXPENDITURES BY TYPE EXPENSE, F.Y. 1978-79 —1980-81

TYPE EXPENDITURE	1978-1979 / ELLIS LIBRARY	1978-1979 / OTHER BRANCH LIBRARIES/	1979-1980 / ELLIS /LIBRARY	1979-1980 / OTHER BRANCH LIBRARIES/	1980-1881 / ELLIS /LIBRARY	1980-1881 / OTHER BRANCH LIBRARIES/	/COMBINED / CHANGE 1980-81 / OVER 1979-80 EXPEND.
BOOKS, PERIODICALS	819698	584738	1058802	631501	976504	657717	229785
							16.36
PERCENT CHANGE OVER PRIOR YEAR			29.17	8.00	-7.77	4.15	
BINDING	61835	27365	88408	42350	81622	45802	38224
							42.85
PERCENT CHANGE OVER PRIOR YEAR			42.97	54.76	-7.67	8.15	
SALARIES & WAGES	1516489	381066	1875425	401181	1804544	477006	483985
							25.51
PERCENT CHANGE OVER PRIOR YEAR			10.48	5.28	13.68	18.90	
OTHER	282524	18562	269785	49006	253988	42561	17443
							6.25
PERCENT CHANGE OVER PRIOR YEAR			2.77	195.89	-5.86	-13.15	
TOTAL EXPENDITURES	2660546	1009731	3092418	1124038	3216638	1223086	769447
							20.96
PERCENT CHANGE OVER PRIOR YEAR			16.23	11.32	4.02	8.81	
COMBINED LIBRARIES		3670277		4216456		4439724	769447
							20.96
PERCENT CHANGE OVER PRIOR YEAR				14.88		5.30	

* SALARIES & WAGES INCLUDE FUNDS OF WORK-STUDY STUDENTS PAID FROM FEDERAL AND OTHER FUNDS OUTSIDE LIBRARY BUDGET, BUT EXCLUDE STAFF BENEFITS, CUSTOMARILY EXCLUDED FROM STATISTICS REPORTED TO ASSOCIATION FOR RESEARCH LIBRARIES. STAFF BENEFITS FOR 1978-79 WERE $238,755; FOR 1979-80 WERE $282,418; AND FOR 1980-81 WERE $323,755.

TABLE 6
UNIVERSITY OF MISSOURI-COLUMBIA
EVALUATION AND PROGRAM PLANNING OF LIBRARY DEVELOPMENT

MINIMUM SIZE OF DESIRABLE LIBRARY COLLECTION IN BOUND VOLUMES APPLYING CLAPP-JORDAN FORMULA AND WASHINGTON ADAPTATION TO COLUMBIA CAMPUS IN 1980

PROGRAM FACTOR GENERATING LIBRARY COLLECTION MINIMUM REQUIREMENTS	TYPE OF UNIT	VOLUMES PER UNIT IN C-J FORMULA	NO. OF UNITS AT UMC IN 1980	MINIMUM NO. OF VOLUMES REQUIRED	SOURCE NOTE
APPLICATION OF CLAPP-JORDAN FORMULA:					(1)
BASIC COLLECTION UNDERGRADUATE	BASIC	—	—	50750	
FACULTY FTE	FACULTY	100	2360	236000	(3)
STUDENT FTE	STUDENTS	12	22256	267072	(3)
UNDERGRAD HONORS OR INDEP STUDY	PROGRAMS	12	2500	30000	(EST.)
UNDERGRAD MAJOR FIELDS	DEGREE	335	82	27470	(4)
GRADUATE MAJOR FIELDS MASTERS	DEGREE	3050	87	265350	(4)
DOCTORAL MAJOR FIELDS DOCTORAL	DEGREE	24500	60	1470000	(4)
"LIMINAL ADEQUACY OF COLLECTIONS" =	VOLUMES			2346642	
WASHINGTON MODIFICATION CLAPP-JORDAN	(WASHINGTON TERM IS "MINIMUM QUANTITATIVE ADEQUACY OF HOLDINGS OF LIBRARY RESOURCES")				
BASIC OR OPENING DAY COLLECTION					(2)
(REV.OF CLAPP-JORDAN BASIC UNDERGRAD	LR UNITS	—	—	85000	
ALLOWANCE PER FTE FACULTY	FTE FCLTY	100	2360	236000	(3)
ALLOWANCE PER FTE STUDENT	FTE STDNT	15	22256	333840	(3)
ALLOWANCE PER MASTERS FIELD WHEN NO DOCTORATE OFFERED IN FIELD	DEGREE OFFERED	6100	32	195200	(4)
ALLOWANCE PER MASTERS FIELD WHEN DOCTORATE IS OFFERED IN FIELD	DEGREE OFFERED	3050	55	167750	(4)
ALLOWANCE PER DOCTORAL FIELD	DEGREE OFFERED	24500	60	1470000	(4)
TOTAL MINIMUM ADEQUATE HOLDINGS				2487790	

SOURCES: (1) VERNER W.CLAPP & ROBERT T.JORDAN,"QUANTITATIVE CRITERIA FOR ADEQUACY OF ACADEMIC LIBRARY COLLECTIONS," COLLEGE & UNIVERSITY LIBRARIES,VOL. 26,NO.5 (SEPTEMBER 1965) PP. 371-380.

(2) INTERINSTITUTIONAL COMMITTEE OF BUSINESS OFFICERS,(WASHINGTON PUBLIC FOUR-YEAR COLLEGES & UNIVERSITIES), "A MODEL BUDGET ANALYSIS SYSTEM FOR PROGRAM 05 LIBRARIES," DENIS J.CURRY, DIRECTOR, OFFICE OF INTER-INSTITUTIONAL BUSINESS STUDIES, OLYMPIA, OCTOBER 1968; CURRENTLY, SEE COUNCIL FOR POSTSECONDARY EDUCATION, STATE OF WASHINGTON, THE FORMULA MANUAL: INSTRUCTION, LIBRARY, STUDENT SERVICES, PLANT OPERATION & MAINTENANCE, REPORT 81-1 JULY 1980, PP.33-74, 193-217.

(3) FALL 1980 STUDENT & FACULTY FTE ESTIMATED FROM DATA FROM OFFICE OF INSTITUTIONAL RESEARCH & PLANNING, UNIVERSITY OF MISSOURI-COLUMBIA.

(4) DEGREE PROGRAMS (= MAJOR FIELDS) COUNTED FROM UNIVERSITY OF MISSOURI REVISION OF THE ACADEMIC PLAN, 1975-1985, ADOPTED BY THE BOARD OF CURATORS, NOVEMBER 21, 1980, APPENDIX INVENTORY OF APPROVED DEGREE PROGRAMS, COLUMBIA CAMPUS. HONORS AND INDEPENDENT STUDY ESTIMATED.

TABLE 7
UNIVERSITY OF MISSOURI-COLUMBIA
EVALUATION AND PROGRAM PLANNING OF LIBRARY DEVELOPMENT

COMPARISON OF ACTUAL ANNUAL LIBRARY ACQUISITION RATES WITH NORMATIVE RATE OF VOLUMES ADDED = 5% OF COLLECTION AND WITH LIBRARY ACQUISITION RATE ENTITLEMENT IN BUDGET FORMULA OF WASHINGTON COUNCIL FOR POSTSECONDARY EDUCATION

FACTOR FOR FISCAL YEAR	VOLUMES AT START OF YEAR	NET ADD AT 5% ACQUIS. RATE	WCPSE* ENTITLE-MENT RATE (6.18%)	WCPSE BUDGET FORMULA 60% RATE	ACTUAL NET ADDED VOLUMES AT UMC	ACTUAL AS % OF WCPSE 60%RATE
BOUND VOLUMES UMC 1979-80	1984632	99232	123047	73828	32015	43.36
BOUND VOLUMES UMC 1980-81	2016647	100832	125032	75019	52141	69.50
PROJECTED VOLUMES IF 5% ACCCESSION RATE OR WASHINGTON BUDGET FORMULA APPLIED:	START YR. 5% RATE				VOLUMES YEAR END IF WCPSE BDGT.RATE	VOLUMES YEAR END IF 5% RATE
BOUND VOLUMES UMC 1981-82	2068788	103439	128285	76959	2145747	2172227
BOUND VOLUMES UMC 1982-83	2172227	108611	132822	79693	2225440	2280838
BOUND VOLUMES UMC 1983-84	2280838	114042	137755	82653	2308093	2394881
BOUND VOLUMES UMC 1984-85	2394881	119744	142871	85723	2393815	2514625
BOUND VOLUMES UMC 1985-86	2514625	125731	148177	88906	2482722	2640356
BOUND VOLUMES UMC 1986-87	2640356	132018	153680	92208	2574930	2772374
BOUND VOLUMES UMC 1987-88	2772374	138619	159388	95633	2670563	2910993
BOUND VOLUMES UMC 1988-89	2910993	145550	165308	99185	2769748	3056542
BOUND VOLUMES UMC 1989-90	3056542	152827	171447	102868	2872616	3209370
ASSUME NET ACCESSION RATE OF 100,000 VOLUMES PER YEAR NET ACQUISITIONS:						
1990-91	3056542	100000		100000	2972616	3309370
1991-92	3309370	100000		100000	3072616	3409370
1991-93	3409870	100000		100000	3172616	3509370
1993-94	3509370	100000		100000	3272616	3609370
1994-95	3609370	100000		100000	3372616	3709370

PERCENTAGE RATE OF NET ACQUISITIONS:	5% RATE	WCPE RATE	AT CONSTANT 100000/YEAR:		
1981-82 THROUGH 1989-90	5.00	3.716	1990-91	3.48	3.12
			1994-95	3.06	2.77

*STATE OF WASHINGTON COUNCIL FOR POSTSECONDARY EDUCATION, THE FORMULA MANUAL: LIBRARIES, PP.62-63 (OLYMPIA: REPORT NO.81-1, JULY 1980). THE ACQUISITIONS ENTITLEMENT IS CALCULATED BY: 1 / .0969+(.0312)(COLLECTION SIZE IN MILLIONS). THIS FORMULA WAS DERIVED BY COMPARATIVE DATA FROM 4-YEAR INSTITUTIONS IN CALIFORNIA, MICHIGAN, WISCONSIN, INDIANA, AND ILLINOIS BY REGRESSION ANALYSIS. FOR THE UNIVERSITY OF MISSOURI-COLUMBIA IN 1981-82, THAT FORMULA RESULTS IN A RATE OF 6.18% FOR 100% BUDGET ENTITLEMENT ACQUISITION RATE; THE 1981 WCPSE BUDGET FORMULA CALLED FOR 60% FUNDING, OR AN AVERAGE BUDGETED ACQUISITION RATE OF 3.716% OF START-OF-YEAR COLLECTION SIZE.

TABLE 8

UNIVERSITY OF MISSOURI-COLUMBIA
EVALUATION AND PROGRAM PLANNING OF LIBRARY DEVELOPMENT

ALTERNATIVE READER STATION NORMS APPLIED TO FALL 1980 UMC FTE STUDENTS

SUBJECT FIELD GROUPS LIBRARY USER POPULATION	LOWER DIVISION FTE (FTE=15C)	UPPER DIVISION FTE (FTE=15C)	GRADUATE & PROF. FTE (FTE=12C)	TOTAL FTE STUDENTS	FACULTY
HUMANITIES (ARTS & SCIENCES)	2479	1119	220	3818	
SOCIAL SCIENCES & RELATED PROFSNL.	3229	3582	1628	8439	
SCIENCES, MATH. & RELATED PROFSNL.	4370	3021	881	8282	
LAW (FTE = 15 SCH)	—	—	431	431	
VETERINARY MED (GRAD FTE=16 SCH)	3	12	339	355	
MEDICINE & HRP (GRAD FTE=18 SCH)	118	246	568	931	
TOTAL FULL-TIME EQUIVALENT STUDENTS	10199	7980	4077	22256	
FACULTY FALL 1980 (PAYROLL 10/31/80) FULL-TIME + 1/3 PART-TIME FACULTY=					2360
READER STATION NORMS:	READER STATIONS IN LIBRARIES:				
1) COMMON STATE FORMULA: 25% OF FTES	2550	1995	1019	5564	
2) ASSOCIATION OF COLLEGE & RESEARCH LIBRARIES NORM: 1/3 OF STUDENTS	3400	2660	1359	7419	
3) WICHE-PMS (NCHEMS) FACILITIES MANUAL ILLUSTRATION (MANUAL 4,41)					
LOWER DIVISION @ 20%	2040				
UPPER DIVISION HUM&SOC SCI @30%		1410			
UPPER DIVISION SCIENCE @ 20%		656			
GRAD & PROF HUM&SOC SCI @40%			738		
GRAD & PROF SCI, VET, MED @25%			449		
LAW @ 75%			324		
TOTAL STUDENT READER STATIONS	2040	2066	1513	5618	
4) "HARVARD UNIVERSITY FORMULA"					
FOR 37.5% OF UNDERGRADUATES	3825	2992		6817	
FOR 90% GRAD SOC SCI,HUM,LAW			2051	2051	
FOR 50% GRAD SCI, VET,MED			899	899	
TOTAL STUDENT READER STATIONS	3825	2992	2950	9767	
ASSUME FACULTY STUDIES IN LIBRARIES FOR 10% OF FULL-TIME & 1/3 PART-TIME					236

TABLE 9

UNIVERSITY OF MISSOURI-COLUMBIA
EVALUATION AND PROGRAM PLANNING OF LIBRARY DEVELOPMENT

APPLICATIION OF WASHINGTON STATE COUNCIL FOR POSTSECONDARY EDUCATION
LIBRARY STAFFING FORMULA TO UNIVERSITY OF MISSOURI-COLUMBIA

STEP 1 - USER BASED STAFFING:	BASE	WEIGHTING	TOTAL	LIBRARY STAFF FACTOR	FORMULA LIBRARY STAFF
INSTITUTIONAL STAFF YEARS ACADEMIC	2360				
(UMC PAYROLL 10/31/80) SUPPORT	5380				
TOTAL STAFF YRS.	7740	1.0	7740		
(FROM TABLE 8:)					
LOWER DIVISION FTE STDNTS	10199	1.0	10199		
UPPER DIVISION FTE STDNTS	7980	2.0	15960		
GRAD 1 ESTIMATED FTE (2/3 GRAD)	2732	4.0	10928		
GRAD 2 ESTIMATED FTE (1/3 GRAD)	1345	6.0	8070		
TOTAL WEIGHTED USERS & USER-BASED LIBRARY STAFF			52895	(/300)=	176.32
STEP 2 - MAINTENANCE STAFF FOR CURRENT COLLECTION:					
START OF YEAR COLLECTION SIZE (TABLE 2, 1980 VOLUMES +TITLES+MICRO+DOCS) =			4400885	(X.0135/ 300) =	198.04
STEP 3 - STAFFING FOR NEW RESOURCE UNIT ACQUISITIONS:					
BUDGETED RESOURCE UNIT ENTITLEMENT (TABLE 7,COL.4)			75019	(X0.27/ 300) =	67.52
STEP 4 - BASE STAFFING (ADDITIONAL AT 2/BRANCH LIBR.)			9 BRANCHES	(X2)=	18.00
STEP 5 - TOTAL STAFFING LEVEL					459.87
STEP 6 - BUDGETED STAFFING LEVEL (64% OF CALCULATED TOTAL STAFFING)					294.32

ACTUAL STAFF AT UMC LIBRARIES (TABLE 4):	PROFESSIONAL FTE	58.00
	SALARIED SUPPORT FTE STAFF	119.00
	COMPUTED FTE HOURLY STAFF	47.06
	TOTAL UMC LIBRARY STAFF	224.06
ADDITIONAL STAFF UNDER WCPSE BUDGET FORMULA FOR UMC LIBRARIES		70.26

SOURCES: COUNCIL FOR POSTSECONDARY EDUCATION, STATE OF WASHINGTON, THE FORMULA MANUAL: LIBRARIES (REPORT 81-1, JULY 1980), PP. 48-50 AND 57-58. SEE TABLE 4 OF THIS REPORT FOR UMC LIBRARY STAFFING IN 1980-81, AND TABLE 2 FOR START OF YEAR COLLECTIONS, TABLE 7 ACQUISITION RATE UNDER WCPSE FORMULA, TABLE 8 FOR FTE STUDENT CALCULATION BY LEVEL. GRAD 1 (500 LEVEL FTE) ESTIMATED AT 2/3 GRADUATE AND GRADUATE PROFESSIONAL FTE; GRAD 2 (600 LEVEL) ESTIMATED AT 1/3.

Libraries of the University of Missouri-Columbia:
LIBRARY EVALUATION AND FACILITIES PROGRAM PLAN

THE SASAKI/MACKEY/MIRA/MARTIN TEAM
December 1981

APPENDIX 2.1

Chapter 2
Section A

Tables 10 through 15

COMPARISONS WITH ARL PEER LIBRARIES

TABLE 10

1978-79 PEER LIBRARY ARL DATA
LIBRARY PROGRAM PLANNING FOR
UNIV. OF MISSOURI-COLUMBIA

OCTOBER 21, 1981
PAGE 1

1978-79 COMPARING 3.1% AVG.ACQUIS.		FALL 1979 ENRL INDX	FULL-TIME GRAD SDTS	78-9 PHDS AWARDED	NO.PHD. FIELDS	'79 TOTAL VOLUMES	78-9 VOLS ADDED NET
BIG 8/ARL MEMBER LIBRARIES							
UNIVERSITY OF COLORADO-BOULDER	(3)	21727	2198	202	43	1811881	50250
IOWA STATE UNIVERSITY	(4)	24004	1856	227	75	1296074	47252
UNIVERSITY OF KANSAS	(5)	24125	2188	203	55	2079434	83544
UNIVERSITY OF MISSOURI-COLMBIA	(6)	23545	2184	281	58	1984632	55400
UNIVERSITY OF NEBRASKA-LINCOLN	(7)	23661	1533	173	42	1441515	57088
UNIVERSITY OF OKLAHOMA	(8)	21080	1748	138	52	1731113	44156
OKLAHOMA STATE UNIVERSITY	(9)	22003	1344	121	35	1230802	20386
KANSAS STATE (NOT ARL MEMBER)	(10)	-	-	-	-	-	-
SUMMATION BIG 8/ARL MEMBERS	(12)	160155	13052	1345	380	11575451	358086
AVERAGE OF 7 BIG 8/ARL LIBR.	(13)	22879	1865	192	51	1653636	51155
NUMBER OF LIBRARIES AVERAGED	(14)	7	7	7	7	7	7
BIG 10 PUBLIC ARL LIBRARIES							
UNIVERSITY OF ILLINOIS-URBANA	(18)	34367	5018	933	75	5759666	136728
INDIANA UNIVERSITY-BLOOMINGTON	(19)	31840	4864	319	70	3961678	133048
PURDUE UNIVERSITY-LAFAYETTE	(20)	31990	3174	376	53	1388152	30377
UNIVERSITY OF IOWA	(21)	24154	2998	288	54	2216970	80081
UNIVERSITY OF MICHIGAN	(22)	38158	6942	600	96	5135952	86451
MICHIGAN STATE UNIVERSITY	(23)	47350	3677	463	139	2523553	91878
UNIVERSITY OF MINNESOTA (MSP)	(24)	63715	7643	466	87	3702599	79138
OHIO STATE UNIVERSITY	(25)	53278	5718	577	82	3446729	75210
UNIV.OF WISCONSIN-MADISON	(26)	40233	7010	680	125	3475184	123284
SUMMATION BIG 10-PUBLIC INST.	(28)	363085	47044	4702	781	31610483	836195
AVERAGE OF 9 PUBLIC BIG 10	(29)	40343	5227	522	87	3512276	92911
NUMBER OF LIBRARIES AVERAGED	(30)	9	9	9	9	9	9
OTHER SELECTED ARL LIBRARIES							
COLORADO STATE UNIVERSITY	(33)	18255	1830	138	33	1182029	51070
UNIV. OF CONNECTICUT-STORRS	(34)	21650	1981	189	130	1710546	88348
FLORIDA STATE UNIVERSITY	(35)	21461	2260	333	50	1338701	72443
UNIVERSITY OF GEORGIA	(36)	22964	1871	181	43	1893897	82662
UNIVERSITY OF KENTUCKY	(37)	22489	1447	107	44	1753044	46391
LOUISIANA STATE UNIVERSITY	(38)	28267	1903	130	49	1760696	52362
UNIV.OF MASSACHUSETTS-AMHERST	(39)	24012	2082	316	45	1654927	67274
STATE UNIV. NEW YORK-BUFFALO	(40)	21759	2817	237	49	1884943	74245
SOUTHERN ILLINOIS-CARBONDALE	(41)	22895	908	172	20	1643598	54722
UNIV. OF TENNESSEE-KNOXVILLE	(42)	30391	2839	179	40	1436193	45652
VIRGINIA POLYTECH INST.& ST.U.	(43)	22508	1920	146	48	1141267	70718
SUMMATION OF 11 OTHER SELECTED	(45)	254451	21838	2128	551	17399841	685887
AVERAGE OF 11 OTHER LIBRARIES	(46)	23132	1985	193	50	1581804	62353
NUMBER OF LIBRARIES AVERAGED	(47)	11	11	11	11	11	11
SUMMATION OF 27 INST. COMPARED	(49)	777691	81834	8175	1882	60585775	1880168
AVERAGE OF 27 ARL LIBRARIES	(50)	28803	3035	303	63	2243918	69636

1978-79 PEER LIBRARY ARL DATA
LIBRARY PROGRAM PLANNING FOR
UNIV. OF MISSOURI-COLUMBIA

Table 10 (continued)
OCTOBER 21, 1981
PAGE 2

1978-79 COMPARING 3.1% AVG.ACQUIS.		VOLS/ENRL 1979 INDX	ACQ/ENRL 78-9 INDX	ACQ RATE TO VOLS	INDX GRAD /ENRL '79	ACQUIS IF NORM 3.1%	DIFF'RNCE ACTL-NORM
BIG 8/ARL MEMBER LIBRARIES							
UNIVERSITY OF COLORADO-BOULDER	(3)	83.4	2.31	0.028	0.101	56168	5918-
IOWA STATE UNIVERSITY	(4)	54.0	1.97	0.036	0.077	40178	7074
UNIVERSITY OF KANSAS	(5)	86.2	3.46	0.040	0.091	64462	19082
UNIVERSITY OF MISSOURI-COLMBIA	(6)	84.3	2.35	0.028	0.093	61524	6124-
UNIVERSITY OF NEBRASKA-LINCOLN	(7)	60.9	2.41	0.040	0.065	44687	12401
UNIVERSITY OF OKLAHOMA	(8)	82.1	2.09	0.026	0.083	53665	9509-
OKLAHOMA STATE UNIVERSITY	(9)	55.9	0.93	0.017	0.061	38155	17759-
KANSAS STATE (NOT ARL MEMBER)	(10)	0.0	0.00	-	-	-	-
SUMMATION BIG 8/ARL MEMBERS	(12)	72.3	2.24	0.031	0.081	358839	753-
AVERAGE OF 7 BIG 8/ARL LIBR.	(13)	72.3	2.24	0.031	0.081	51263	108-
NUMBER OF LIBRARIES AVERAGED	(14)	1.0	1.00	1.000	1.000	7	7
BIG 10 PUBLIC ARL LIBRARIES							
UNIVERSITY OF ILLINOIS-URBANA	(18)	167.6	3.98	0.024	0.146	178550	41822-
INDIANA UNIVERSITY-BLOOMINGTON	(19)	124.4	4.18	0.034	0.153	122812	10236
PURDUE UNIVERSITY-LAFAYETTE	(20)	43.4	0.95	0.022	0.099	43033	12656-
UNIVERSITY OF IOWA	(21)	91.8	3.32	0.036	0.124	68726	11355
UNIVERSITY OF MICHIGAN	(22)	142.0	2.39	0.017	0.192	159215	72764-
MICHIGAN STATE UNIVERSITY	(23)	53.3	1.94	0.036	0.078	78230	13648
UNIVERSITY OF MINNESOTA (MSP)	(24)	58.1	1.24	0.021	0.120	114781	35643-
OHIO STATE UNIVERSITY	(25)	64.7	1.41	0.022	0.107	106849	31639-
UNIV.OF WISCONSIN-MADISON	(26)	86.4	3.06	0.035	0.174	107731	15553
SUMMATION BIG 10-PUBLIC INST.	(28)	87.1	2.30	0.026	0.130	979825	143730-
AVERAGE OF 8 PUBLIC BIG 10	(29)	87.1	2.30	0.026	0.130	108881	15970-
NUMBER OF LIBRARIES AVERAGED	(30)	1.0	1.00	1.000	1.000	9	9
OTHER SELECTED ARL LIBRARIES							
COLORADO STATE UNIVERSITY	(33)	64.8	2.80	0.043	0.100	36643	14427
UNIV. OF CONNECTICUT-STORRS	(34)	79.0	3.16	0.040	0.091	53027	15321
FLORIDA STATE UNIVERSITY	(35)	62.4	3.38	0.054	0.105	41500	30943
UNIVERSITY OF GEORGIA	(36)	82.5	3.60	0.044	0.081	58711	23951
UNIVERSITY OF KENTUCKY	(37)	78.0	2.08	0.026	0.064	54344	7953-
LOUISIANA STATE UNIVERSITY	(38)	67.0	1.99	0.030	0.072	54582	2220-
UNIV.OF MASSACHUSETTS-AMHERST	(39)	68.9	2.80	0.041	0.087	51303	15971
STATE UNIV. NEW YORK-BUFFALO	(40)	86.6	3.41	0.039	0.129	58433	15812
SOUTHERN ILLINOIS-CARBONDALE	(41)	72.4	2.41	0.033	0.040	50952	3770
UNIV. OF TENNESSEE-KNOXVILLE	(42)	47.3	1.50	0.032	0.093	44522	1130
VIRGINIA POLYTECH INST.& ST.U.	(43)	50.7	3.14	0.062	0.085	35379	35339
SUMMATION OF 11 OTHER SELECTED	(45)	68.4	2.70	0.039	0.086	539395	146492
AVERAGE OF 11 OTHER LIBRARIES	(46)	68.4	2.70	0.039	0.086	49036	13317
NUMBER OF LIBRARIES AVERAGED	(47)	1.0	1.00	1.000	1.000	11	11
SUMMATION OF 27 INST. COMPARED	(49)	77.9	2.42	0.031	0.105	1878159	2009
AVERAGE OF 27 ARL LIBRARIES	(50)	77.9	2.42	0.031	0.105	69561	74

SASAKI/MACKEY/MIRA TEAM UMC

1979-80 PEER LIBRARY ARL DATA
LIBRARY PROGRAM PLANNING FOR
UNIV. OF MISSOURI-COLUMBIA

TABLE 11
OCTOBER 21, 1981
PAGE 1

979-80 COMPARING 3.13% AVG.ACQUIS		FALL 1979 ENRL INDX	FULL-TIME GRAD SDTS	79-80 PHD AWARDS	NO.PHD. FIELDS	'80 TOTAL VOLUMES	79-80 VOL ADDED NET
BIG 8/ARL MEMBER LIBRARIES							
NIVERSITY OF COLORADO-BOULDER	(3)	22736	2863	213	43	1852904	41023
OWA STATE UNIVERSITY	(4)	24814	1930	239	70	1349909	53835
NIVERSITY OF KANSAS	(5)	23473	2244	238	55	2148451	67465
NIVERSITY OF MISSOURI-COLMBIA	(6)	24169	2261	228	59	2016647	50023
NIVERSITY OF NEBRASKA-LINCOLN	(7)	22482	1416	191	42	1494040	52525
NIVERSITY OF OKLAHOMA	(8)	23412	1800	380	79	1808276	69743
KLAHOMA STATE UNIVERSITY	(9)	24010	1221	121	37	1253052	23250
ANSAS STATE (NOT ARL MEMBER)	(10)	-	-	-	-	-	-
UMMATION BIG 8/ARL MEMBERS	(12)	165206	13735	1610	385	11923279	357864
VERAGE OF 7 BIG 8/ARL LIBR.	(13)	23601	1962	230	55	1703326	51123
UMBER OF LIBRARIES AVERAGED	(14)	7	7	7	7	7	7
BIG 10 PUBLIC ARL LIBRARIES							
NIVERSITY OF ILLINOIS-URBANA	(18)	41672	5068	597	75	5936823	177157
NDIANA UNIVERSITY-BLOOMINGTON	(19)	32648	3956	255	70	3759203	131476
URDUE UNIVERSITY-LAFAYETTE	(20)	32921	3339	387	53	1424896	36744
NIVERSITY OF IOWA	(21)	24518	3023	260	54	2295266	78296
NIVERSITY OF MICHIGAN	(22)	40239	6893	543	133	5234380	98428
ICHIGAN STATE UNIVERSITY	(23)	50266	3734	473	139	2613447	96836
NIVERSITY OF MINNESOTA (MSP)	(24)	55679	7835	466	87	3807570	68554
HIO STATE UNIVERSITY	(25)	55152	6189	563	82	3529985	83256
NIV.OF WISCONSIN-MADISON	(26)	43695	7396	664	128	3631669	156485
UMMATION BIG 10-PUBLIC INST.	(28)	376790	47433	4208	821	32233239	927232
VERAGE OF 9 PUBLIC BIG 10	(29)	41866	5270	468	91	3581471	103026
UMBER OF LIBRARIES AVERAGED	(30)	9	9	9	9	9	9
THER SELECTED ARL LIBRARIES							
OLORADO STATE UNIVERSITY	(33)	19248	1786	141	34	1232923	46509
NIV. OF CONNECTICUT-STORRS	(34)	20190	1969	161	64	1657850	61923
LORIDA STATE UNIVERSITY	(35)	21258	2130	332	82	1393156	54455
NIVERSITY OF GEORGIA	(36)	25677	2946	194	43	1985646	91749
NIVERSITY OF KENTUCKY	(37)	21477	1601	119	47	1792048	39004
OUISIANA STATE UNIVERSITY	(38)	25492	1870	129	48	1822626	61930
NIV.OF MASSACHUSETTS-AMHERST	(39)	25537	2167	282	53	1730872	75945
TATE UNIV. NEW YORK-BUFFALO	(40)	27931	4584	265	65	1936437	51494
OUTHERN ILLINOIS-CARBONDALE	(41)	23035	901	164	20	1630825	44886
NIV. OF TENNESSEE-KNOXVILLE	(42)	29418	2747	186	41	1356369	40406
IRGINIA POLYTECH INST.& ST.U.	(43)	22806	2076	124	48	1226037	84770
UMMATION OF 11 OTHER SELECTED	(45)	262070	24777	2097	525	17764789	653071
VERAGE OF 11 OTHER LIBRARIES	(46)	23825	2252	191	48	1614981	59370
UMBER OF LIBRARIES AVERAGED	(47)	11	11	11	11	11	11
UMMATION OF 27 INST. COMPARED	(49)	804066	85845	7915	1731	61921307	1938167
VERAGE OF 27 ARL LIBRARIES	(50)	29780	3183	293	64	2293382	71784

1978-80 PEER LIBRARY ARL DATA
LIBRARY PROGRAM PLANNING FOR
UNIV. OF MISSOURI-COLUMBIA

Table 11 (continued)
OCTOBER 21, 1981
PAGE 2

1979-80 COMPARING 3.13% AVG.ACQUIS		VOLS/ENRL 79-80INDX	ACQ/ENRL 79-80INDX	ACQ RATE TO VOLS	INDX GRAD /ENRL '79	ACQUIS IF NRM 3.13%	DIFF'RNCE ACTL-NORM
BIG 8/ARL MEMBER LIBRARIES							
UNIVERSITY OF COLORADO-BOULDER	(3)	81.5	1.80	0.022	0.126	57996	16973-
IOWA STATE UNIVERSITY	(4)	54.2	2.16	0.040	0.077	42252	11583
UNIVERSITY OF KANSAS	(5)	81.5	2.87	0.031	0.096	67247	218
UNIVERSITY OF MISSOURI-COLMBIA	(6)	83.4	2.07	0.025	0.094	63121	13088-
UNIVERSITY OF NEBRASKA-LINCOLN	(7)	66.4	2.34	0.035	0.063	48763	5762
UNIVERSITY OF OKLAHOMA	(8)	77.2	2.98	0.039	0.077	56599	13144
OKLAHOMA STATE UNIVERSITY	(9)	52.2	0.97	0.019	0.051	39221	15971-
KANSAS STATE (NOT ARL MEMBER)	(10)	0.0	0.00	0.000	0.000	-	
SUMMATION BIG 8/ARL MEMBERS	(12)	72.2	2.17	0.030	0.083	373199	15335-
AVERAGE OF 7 BIG 8/ARL LIBR.	(13)	72.2	2.17	0.030	0.083	53314	2191-
NUMBER OF LIBRARIES AVERAGED	(14)	1.0	1.00	1.000	1.000	7	7
BIG 10 PUBLIC ARL LIBRARIES							
UNIVERSITY OF ILLINOIS-URBANA	(18)	142.5	4.25	0.030	0.122	185823	8666-
INDIANA UNIVERSITY-BLOOMINGTON	(19)	115.1	4.03	0.035	0.121	117663	13813
PURDUE UNIVERSITY-LAFAYETTE	(20)	43.3	1.12	0.026	0.101	44599	7855-
UNIVERSITY OF IOWA	(21)	93.6	3.19	0.034	0.123	71842	6454
UNIVERSITY OF MICHIGAN	(22)	130.1	2.45	0.019	0.171	163836	65408-
MICHIGAN STATE UNIVERSITY	(23)	52.0	1.93	0.037	0.074	81801	15035
UNIVERSITY OF MINNESOTA (MSP)	(24)	68.4	1.23	0.018	0.141	119177	50623-
OHIO STATE UNIVERSITY	(25)	64.0	1.51	0.024	0.112	110489	27233-
UNIV.OF WISCONSIN-MADISON	(28)	83.1	3.58	0.043	0.169	113671	42814
SUMMATION BIG 10-PUBLIC INST.	(28)	85.5	2.46	0.029	0.126	1008900	81668-
AVERAGE OF 9 PUBLIC BIG 10	(29)	85.5	2.46	0.029	0.126	112100	9074-
NUMBER OF LIBRARIES AVERAGED	(30)	1.0	1.00	1.000	1.000	9	9
OTHER SELECTED ARL LIBRARIES							
COLORADO STATE UNIVERSITY	(33)	84.1	2.42	0.038	0.093	38590	7919
UNIV. OF CONNECTICUT-STORRS	(34)	82.1	3.07	0.037	0.098	51891	10032
FLORIDA STATE UNIVERSITY	(35)	65.5	2.56	0.039	0.100	43606	10849
UNIVERSITY OF GEORGIA	(36)	77.3	3.57	0.046	0.115	62151	29598
UNIVERSITY OF KENTUCKY	(37)	83.4	1.82	0.022	0.075	56091	17087-
LOUISIANA STATE UNIVERSITY	(38)	71.5	2.43	0.034	0.073	57048	4882
UNIV.OF MASSACHUSETTS-AMHERST	(39)	67.8	2.97	0.044	0.085	54176	21769
STATE UNIV. NEW YORK-BUFFALO	(40)	69.3	1.84	0.027	0.164	60610	9116-
SOUTHERN ILLINOIS-CARBONDALE	(41)	70.8	1.95	0.028	0.039	51045	8159-
UNIV. OF TENNESSEE-KNOXVILLE	(42)	46.1	1.37	0.030	0.093	42454	2048-
VIRGINIA POLYTECH INST.& ST.U.	(43)	53.8	3.72	0.069	0.091	38375	46395
SUMMATION OF 11 OTHER SELECTED	(45)	67.8	2.49	0.037	0.095	556038	97033
AVERAGE OF 11 OTHER LIBRARIES	(46)	67.8	2.49	0.037	0.095	50549	8821
NUMBER OF LIBRARIES AVERAGED	(47)	1.0	1.00	1.000	1.000	11	11
SUMMATION OF 27 INST. COMPARED	(49)	77.0	2.41	0.031	0.107	1938137	30
AVERAGE OF 27 ARL LIBRARIES	(50)	77.0	2.41	0.031	0.107	71783	1

SASAKI/MACKEY/MIRA TEAM UMC

1978-79 PEER LIBRARY ARL DATA
LIBRARY PROGRAM PLANNING FOR
UNIV. OF MISSOURI-COLUMBIA

TABLE 12A
OCTOBER 21, 1981
PAGE 1

1978-79 COMPARING 5% ACQUIS. RATE		VOLS/ENRL 1979 INDX	ACQ/ENRL 79-80INDX	ACQ RATE TO VOLS	INDX GRAD /ENRL '79	ACQUIS.IF NORM @ 5%	DIFF'RNCE ACTL-NORM
BIG/ARL MEMBER LIBRARIES							
UNIVERSITY OF COLORADO-BOULDER	(3)	83.4	2.31	0.028	0.101	90594	40344-
IOWA STATE UNIVERSITY	(4)	54.0	1.97	0.036	0.077	64804	17552-
UNIVERSITY OF KANSAS	(5)	86.2	3.46	0.040	0.091	103972	20428-
UNIVERSITY OF MISSOURI-COLMBIA	(6)	84.3	2.35	0.028	0.093	99232	43832-
UNIVERSITY OF NEBRASKA-LINCOLN	(7)	60.9	2.41	0.040	0.065	72076	14988-
UNIVERSITY OF OKLAHOMA	(8)	82.1	2.09	0.026	0.083	86556	42400-
OKLAHOMA STATE UNIVERSITY	(9)	55.9	0.93	0.017	0.061	61540	41144-
KANSAS STATE (NOT ARL MEMBER)	(10)	0.0	0.00	0.000	0.000	-	-
SUMMATION BIG 8/ARL MEMBERS	(12)	72.3	2.24	0.031	0.081	578773	220687-
AVERAGE OF 7 BIG 8/ARL LIBR.	(13)	72.3	2.24	0.031	0.081	82682	31527-
NUMBER OF LIBRARIES AVERAGED	(14)	1.0	1.00	1.000	1.000	7	7
BIG 10 PUBLIC ARL LIBRARIES							
UNIVERSITY OF ILLINOIS-URBANA	(18)	167.6	3.98	0.024	0.148	287983	151255-
INDIANA UNIVERSITY-BLOOMINGTON	(19)	124.4	4.18	0.034	0.153	198084	65036-
PURDUE UNIVERSITY-LAFAYETTE	(20)	43.4	0.95	0.022	0.099	69408	39031-
UNIVERSITY OF IOWA	(21)	91.8	3.32	0.036	0.124	110849	30768-
UNIVERSITY OF MICHIGAN	(22)	142.0	2.39	0.017	0.192	256798	170347-
MICHIGAN STATE UNIVERSITY	(23)	53.3	1.94	0.036	0.078	126178	34300-
UNIVERSITY OF MINNESOTA (MSP)	(24)	58.1	1.24	0.021	0.120	185130	105992-
OHIO STATE UNIVERSITY	(25)	64.7	1.41	0.022	0.107	172336	97126-
UNIV.OF WISCONSIN-MADISON	(26)	86.4	3.06	0.035	0.174	173759	50475-
SUMMATION BIG 10-PUBLIC INST.	(28)	87.1	2.30	0.026	0.130	1580524	744329-
AVERAGE OF 9 PUBLIC BIG 10	(29)	87.1	2.30	0.026	0.130	175614	82703-
NUMBER OF LIBRARIES AVERAGED	(30)	1.0	1.00	1.000	1.000	9	9
OTHER SELECTED ARL LIBRARIES							
COLORADO STATE UNIVERSITY	(33)	64.8	2.80	0.043	0.100	59101	8031-
UNIV. OF CONNECTICUT-STORRS	(34)	79.0	3.16	0.040	0.091	85527	17179-
FLORIDA STATE UNIVERSITY	(35)	62.4	3.38	0.054	0.105	66935	5508
UNIVERSITY OF GEORGIA	(36)	82.5	3.60	0.044	0.081	94695	12033-
UNIVERSITY OF KENTUCKY	(37)	78.0	2.06	0.026	0.064	87652	41261-
LOUISIANA STATE UNIVERSITY	(38)	67.0	1.98	0.030	0.072	88035	35673-
UNIV.OF MASSACHUSETTS-AMHERST	(39)	68.9	2.80	0.041	0.087	82746	15472-
STATE UNIV. NEW YORK-BUFFALO	(40)	86.6	3.41	0.039	0.129	94247	20002-
SOUTHERN ILLINOIS-CARBONDALE	(41)	72.4	2.41	0.033	0.040	82180	27458-
UNIV. OF TENNESSEE-KNOXVILLE	(42)	47.3	1.50	0.032	0.093	71810	26158-
VIRGINIA POLYTECH INST.& ST.U.	(43)	50.7	3.14	0.062	0.085	57063	13655
SUMMATION OF 11 OTHER SELECTED	(45)	68.4	2.70	0.039	0.086	869992	184105-
AVERAGE OF 11 OTHER LIBRARIES	(46)	68.4	2.70	0.039	0.086	79090	16737-
NUMBER OF LIBRARIES AVERAGED	(47)	1.0	1.00	1.000	1.000	11	11
SUMMATION OF 27 INST. COMPARED	(49)	77.9	2.42	0.031	0.105	3029289	1149121-
AVERAGE OF 27 ARL LIBRARIES	(50)	77.9	2.42	0.031	0.105	112196	42560-

1979-80 PEER LIBRARY ARL DATA
LIBRARY PROGRAM PLANNING FOR
UNIV. OF MISSOURI-COLUMBIA

TABLE 12B
OCTOBER 21, 1981
PAGE 1

1979-80 COMPARING 5% ACQUIS. RATE		VOLS/ENRL 79-80INDX	ACQ/ENRL 79-80INDX	ACQ RATE TO VOLS	INDX GRAD /ENRL '79	ACQUIS IF NORM @ 5%	DIFF'RNCE ACTL-NORM
BIG/ARL MEMBER LIBRARIES							
UNIVERSITY OF COLORADO-BOULDER	(3)	81.5	1.80	0.022	0.126	92645	51622-
IOWA STATE UNIVERSITY	(4)	54.2	2.16	0.040	0.077	67495	13660-
UNIVERSITY OF KANSAS	(5)	91.5	2.87	0.031	0.096	107423	38958-
UNIVERSITY OF MISSOURI-COLUMBIA	(6)	83.4	2.07	0.025	0.094	100832	50809-
UNIVERSITY OF NEBRASKA-LINCOLN	(7)	68.4	2.34	0.035	0.063	74702	22177-
UNIVERSITY OF OKLAHOMA	(8)	77.2	2.98	0.039	0.077	90414	20671-
OKLAHOMA STATE UNIVERSITY	(9)	52.2	0.97	0.019	0.051	62653	39403-
KANSAS STATE (NOT ARL MEMBER)	(10)	0.0	0.00	0.000	0.000	-	-
SUMMATION BIG 8/ARL MEMBERS	(12)	72.2	2.17	0.030	0.083	598164	238300-
AVERAGE OF 7 BIG 8/ARL LIBR.	(13)	72.2	2.17	0.030	0.083	85166	34043-
NUMBER OF LIBRARIES AVERAGED	(14)	1.0	1.00	1.000	1.000	7	7
BIG 10 PUBLIC ARL LIBRARIES							
UNIVERSITY OF ILLINOIS-URBANA	(18)	142.5	4.25	0.030	0.122	296841	119684-
INDIANA UNIVERSITY-BLOOMINGTON	(19)	115.1	4.03	0.035	0.121	187960	56484-
PURDUE UNIVERSITY-LAFAYETTE	(20)	43.3	1.12	0.026	0.101	71245	34501-
UNIVERSITY OF IOWA	(21)	93.6	3.19	0.034	0.123	114763	36467-
UNIVERSITY OF MICHIGAN	(22)	130.1	2.45	0.019	0.171	261719	163291-
MICHIGAN STATE UNIVERSITY	(23)	52.0	1.93	0.037	0.074	130672	33836-
UNIVERSITY OF MINNESOTA (MSP)	(24)	68.4	1.23	0.018	0.141	190379	121825-
OHIO STATE UNIVERSITY	(25)	64.0	1.51	0.024	0.112	176499	93243-
UNIV.OF WISCONSIN-MADISON	(26)	83.1	3.58	0.043	0.169	181583	25098-
SUMMATION BIG 10-PUBLIC INST.	(28)	85.5	2.46	0.029	0.126	1611662	684430-
AVERAGE OF 9 PUBLIC BIG 10	(29)	85.5	2.46	0.029	0.126	179074	76048-
NUMBER OF LIBRARIES AVERAGED	(30)	1.0	1.00	1.000	1.000	9	9
OTHER SELECTED ARL LIBRARIES							
COLORADO STATE UNIVERSITY	(33)	64.1	2.42	0.038	0.093	61646	15137-
UNIV. OF CONNECTICUT-STORRS	(34)	82.1	3.07	0.037	0.098	82893	20970-
FLORIDA STATE UNIVERSITY	(35)	65.5	2.56	0.039	0.100	69658	15203-
UNIVERSITY OF GEORGIA	(36)	77.3	3.57	0.046	0.115	99282	7593-
UNIVERSITY OF KENTUCKY	(37)	83.4	1.82	0.022	0.075	89602	50598-
LOUISIANA STATE UNIVERSITY	(38)	71.5	2.43	0.034	0.073	91131	29201-
UNIV.OF MASSACHUSETTS-AMHERST	(39)	67.8	2.97	0.044	0.085	86544	10598-
STATE UNIV. NEW YORK-BUFFALO	(40)	69.3	1.84	0.027	0.164	96822	45328-
SOUTHERN ILLINOIS-CARBONDALE	(41)	70.8	1.95	0.028	0.039	81541	36655-
UNIV. OF TENNESSEE-KNOXVILLE	(42)	46.1	1.37	0.030	0.093	67818	27412-
VIRGINIA POLYTECH INST.& ST.U.	(43)	53.8	3.72	0.069	0.091	61302	23468
SUMMATION OF 11 OTHER SELECTED	(45)	67.8	2.49	0.037	0.095	888239	235168-
AVERAGE OF 11 OTHER LIBRARIES	(46)	67.8	2.49	0.037	0.095	80749	21379-
NUMBER OF LIBRARIES AVERAGED	(47)	1.0	1.00	1.000	1.000	11	11
SUMMATION OF 27 INST. COMPARED	(49)	77.0	2.41	0.031	0.107	3096065	1157898-
AVERAGE OF 27 ARL LIBRARIES	(50)	77.0	2.41	0.031	0.107	114669	42885-

SASAKI/MACKEY/MIRA TEAM UMC

TABLE 13

COMPARISON OF ARL LIBRARY DATA 1978-79/1979-80 AND ACTUAL V. NORMATIVE ACQUISITION RATES

OCTOBER 21, 1981

ACTUAL V. NORMATIVE ACQUISITIONS		'79 TOTAL VOLUMES	'80 TOTAL VOLUMES	78-9 VOLS ADDED NET	79-80 VOL ADDED NET	78-79 NET ACQ/VOLS.	79-80 NET ACQ/VOLS.
BIG 8/ARL MEMBER LIBRARIES							
UNIVERSITY OF COLORADO-BOULDER	(3)	1811881	1862904	50250	41023	0.0280	0.0220
IOWA STATE UNIVERSITY	(4)	1296074	1348809	47252	53835	0.0360	0.0400
UNIVERSITY OF KANSAS	(5)	2079434	2148451	83544	67465	0.0400	0.0310
UNIVERSITY OF MISSOURI-COLMBIA	(6)	1984632	2016647	55400	50023	0.0280	0.0250
UNIVERSITY OF NEBRASKA-LINCOLN	(7)	1441515	1494040	57088	52525	0.0400	0.0350
UNIVERSITY OF OKLAHOMA	(8)	1731113	1808276	44156	69743	0.0260	0.0390
OKLAHOMA STATE UNIVERSITY	(9)	1230802	1253052	20396	23250	0.0170	0.0190
KANSAS STATE (NOT ARL MEMBER)	(10)	-	-	-	-	-	-
SUMMATION BIG 8/ARL MEMBERS	(12)	11575451	11923279	358086	357864	0.2150	0.2110
AVERAGE OF 7 BIG 8/ARL LIBR.	(13)	1653636	1703326	51155	51123	0.0309	0.0300
NUMBER OF LIBRARIES AVERAGED	(14)	7	7	7	7	7.0000	7.0000
BIG 10 PUBLIC ARL LIBRARIES							
UNIVERSITY OF ILLINOIS-URBANA	(18)	5759666	5936823	136728	177157	0.0240	0.0300
INDIANA UNIVERSITY-BLOOMINGTON	(19)	3961678	3759203	133048	131476	0.0340	0.0350
PURDUE UNIVERSITY-LAFAYETTE	(20)	1388152	1424896	30377	36744	0.0220	0.0260
UNIVERSITY OF IOWA	(21)	2216970	2295266	80081	78296	0.0360	0.0340
UNIVERSITY OF MICHIGAN	(22)	5135952	5234380	86451	98428	0.0170	0.0190
MICHIGAN STATE UNIVERSITY	(23)	2523553	2613447	91878	96836	0.0360	0.0370
UNIVERSITY OF MINNESOTA (MSP)	(24)	3702599	3807570	79138	68554	0.0210	0.0180
OHIO STATE UNIVERSITY	(25)	3448729	3529985	75210	83256	0.0220	0.0240
UNIV. OF WISCONSIN-MADISON	(26)	3475184	3631669	123284	156485	0.0350	0.0430
SUMMATION BIG 10-PUBLIC LIBR.	(28)	31610483	32233239	836195	927232	0.2470	0.2660
AVERAGE OF 9 PUBLIC BIG 10	(29)	3512276	3581471	92911	103026	0.0265	0.0288
NUMBER OF LIBRARIES AVERAGED	(30)	9	9	9	9	9.0000	9.0000
OTHER SELECTED ARL LIBRARIES							
COLORADO STATE UNIVERSITY	(33)	1182029	1232923	51070	46509	0.0430	0.0380
UNIV. OF CONNECTICUT-STORRS	(34)	1710546	1657850	58348	61923	0.0400	0.0370
FLORIDA STATE UNIVERSITY	(35)	1338701	1383156	72443	54455	0.0540	0.0390
UNIVERSITY OF GEORGIA	(36)	1893897	1985646	82662	91749	0.0440	0.0460
UNIVERSITY OF KENTUCKY	(37)	1753044	1792048	46391	39004	0.0260	0.0220
LOUISIANA STATE UNIVERSITY	(38)	1760696	1822626	52362	61930	0.0300	0.0340
UNIV.OF MASSACHUSETTS-AMHERST	(39)	1654927	1730872	67274	75945	0.0410	0.0440
STATE UNIV. NEW YORK-BUFFALO	(40)	1884943	1936437	74245	51494	0.0390	0.0270
SOUTHERN ILLINOIS-CARBONDALE	(41)	1643598	1630825	54722	44886	0.0330	0.0280
UNIV.OF TENNESSEE-KNOXVILLE	(42)	1436193	1356369	45652	40400	0.0320	0.0300
VIRGINIA POLYTECH INST.& ST.U.	(43)	1141267	1226037	70718	84770	0.0620	0.0690
SUMMATION OF 11 OTHER SELECTED	(45)	17399841	17764789	685887	653071	0.4440	0.4140
AVERAGE OF 11 OTHER LIBRARIES	(46)	1581804	1614981	62353	59370	0.0394	0.0368
NUMBER OF LIBRARIES AVERAGED	(47)	11	11	11	11	11.0000	11.0000
SUMMATION OF 27 INST. COMPARED	(49)	60585775	61921307	1880168	1938167	-	-
AVERAGE OF 27 ARL LIBRARIES	(50)	2243918	2293382	69636	71784	0.0310	0.0313

COMPARISON OF ARL LIBRARY DATA
1978-79/1979-80 AND ACTUAL V.
NORMATIVE ACQUISITION RATES

Table 13 (continued)
OCTOBER 21, 1981
PAGE 2

ACTUAL V. NORMATIVE ACQUISITIONS		ACQ.78-9 NORM.5%	ACQ.78-9 NORM.3.1%	ACQ.79-80 NORM.5%	ACQ.79-80 NRM.3.13%	ACQ.79-80 NRM.3.72%	DIFF.ACTL -3.72%NRM
BIG 8/ARL MEMBER LIBRARIES							
UNIVERSITY OF COLORADO-BOULDER	(3)	90584	56168	92645	57996	68854	27831-
IOWA STATE UNIVERSITY	(4)	64804	40178	67495	42252	50163	3672
UNIVERSITY OF KANSAS	(5)	103872	64462	107423	67247	79836	12371-
UNIVERSITY OF MISSOURI-COLUMBIA	(6)	98232	61524	100832	63121	74939	24916-
UNIVERSITY OF NEBRASKA-LINCOLN	(7)	72076	44887	74702	46763	55519	2994-
UNIVERSITY OF OKLAHOMA	(8)	86556	53685	90414	56599	67196	2547
OKLAHOMA STATE UNIVERSITY	(9)	61540	38155	62653	39221	46563	23313-
KANSAS STATE (NOT ARL MEMBER)	(10)	-	-	-	-	-	-
SUMMATION BIG 8/ARL MEMBERS	(12)	578774	358839	596164	373199	443069	85205-
AVERAGE OF 7 BIG 8/ARL LIBR.	(13)	82682	51263	85166	53314	63296	12172-
NUMBER OF LIBRARIES AVERAGED	(14)	7	7	7	7	7	7
BIG 10 PUBLIC ARL LIBRARIES							
UNIVERSITY OF ILLINOIS-URBANA	(18)	287983	178550	296841	185823	220612	43455-
INDIANA UNIVERSITY-BLOOMINGTON	(19)	198084	122812	187960	117663	139692	8216-
PURDUE UNIVERSITY-LAFAYETTE	(20)	69408	43033	71245	44599	52949	16205-
UNIVERSITY OF IOWA	(21)	110849	68726	114763	71842	85292	6996-
UNIVERSITY OF MICHIGAN	(22)	256798	159215	261719	163836	194510	96082-
MICHIGAN STATE UNIVERSITY	(23)	126178	78230	130672	81801	97116	280-
UNIVERSITY OF MINNESOTA (MSP)	(24)	185130	114781	190379	119177	141489	72935-
OHIO STATE UNIVERSITY	(25)	172336	106849	176499	110489	131174	47918-
UNIV. OF WISCONSIN-MADISON	(26)	173759	107731	181583	113671	134953	21532
SUMMATION BIG 10-PUBLIC LIBR.	(28)	1580525	979927	1611661	1008901	1197787	270555-
AVERAGE OF 9 PUBLIC BIG 10	(29)	175614	108881	179073	112100	133087	30062-
NUMBER OF LIBRARIES AVERAGED	(30)	9	9	9	9	9	9
OTHER SELECTED ARL LIBRARIES							
COLORADO STATE UNIVERSITY	(33)	59101	36643	61646	38590	45815	694
UNIV. OF CONNECTICUT-STORRS	(34)	85527	53027	82893	51891	61606	317
FLORIDA STATE UNIVERSITY	(35)	66935	41500	69658	43606	51770	2685
UNIVERSITY OF GEORGIA	(36)	94695	58711	99282	62151	73787	17962
UNIVERSITY OF KENTUCKY	(37)	87652	54344	89602	56091	66593	27589-
LOUISIANA STATE UNIVERSITY	(38)	88035	54582	91131	57048	67729	5799-
UNIV.OF MASSACHUSETTS-AMHERST	(39)	82746	51303	86544	54176	64319	11626
STATE UNIV. NEW YORK-BUFFALO	(40)	94247	58433	96822	60610	71958	20464-
SOUTHERN ILLINOIS-CARBONDALE	(41)	82180	50952	81541	51045	60601	15715-
UNIV.OF TENNESSEE-KNOXVILLE	(42)	71810	44522	67818	42454	50403	9997-
VIRGINIA POLYTECH INST.& ST.U.	(43)	57036	35379	61302	38375	45560	39210
SUMMATION OF 11 OTHER SELECTED	(45)	869964	539396	888239	556037	660140	7069-
AVERAGE OF 11 OTHER LIBRARIES	(46)	79088	49036	80749	50549	60013	643-
NUMBER OF LIBRARIES AVERAGED	(47)	11	11	11	11	11	11
SUMMATION OF 27 INST. COMPARED	(49)	3029263	1878162	3096064	1938137	2300996	362829-
AVERAGE OF 27 ARL LIBRARIES	(50)	112195	69562	114669	71783	85222	13438-

TABLE 14

LIBRARY SIZES COMPARED 1979-80
ARL PEER GROUP - UNIVERSITY OF MISSOURI-COLUMBIA PROGRAM PLAN

OCTOBER 25, 1981

ARL PEER LIBRARIES RANKED BY SIZE		FALL 1979 ENRL.INDX	FULL-TIME GRAD SDTS	79-80 PHD AWARDS	NO. PHD. FIELDS	'80 TOTAL VOLUMES	79-80 NET VOLS.ACQ.
LIBRARIES OVER 3 MILLION VOLS							
UNIVERSITY OF ILLINOIS-URBANA	(3)	41672	5068	597	75	5936823	177157
UNIVERSITY OF MICHIGAN	(4)	40239	6893	543	133	5234380	98428
UNIVERSITY OF MINNESOTA (MSP)	(5)	55679	7835	466	87	3807570	68554
INDIANA UNIVERSITY-BLOOMINGTON	(6)	32648	3956	255	70	3759203	131476
UNIVERSITY OF WISCONSIN-MADISN	(7)	43695	7398	664	128	3631669	156485
OHIO STATE UNIVERSITY	(8)	55152	6189	563	82	3529985	83256
SUMMATION 6 LARGER LIBRARIES	(10)	269085	37337	3088	575	25898630	715356
AVERAGE OF 8 LARGER LIBRARIES	(11)	44848	6223	515	96	4316605	119226
NUMBER OF LIBRARIES AVERAGED	(12)	6	6	6	6	6	6
LIBRARIES 1.5-3 MILLION VOLS.							
MICHIGAN STATE UNIVERSITY	(16)	50256	3734	473	139	2613447	96836
UNIVERSITY OF IOWA	(17)	24518	3023	260	54	2295256	78296
UNIVERSITY OF KANSAS	(18)	23473	2244	238	55	2148451	67465
UNIVERSITY OF MISSOURI-COLUMBIA	(19)	24169	2351	228	59	2016647	50023
UNIVERSITY OF GEORGIA	(20)	25677	2946	194	43	1985646	91749
STATE UNIV.OF NEW YORK-BUFFALO	(21)	27931	4584	265	65	1936437	51494
UNIVERSITY OF COLORADO-BOULDER	(22)	22736	2863	213	43	1852904	41023
LOUISIANA STATE UNIVERSITY	(23)	25492	1870	129	48	1822626	61930
UNIVERSITY OF OKLAHOMA	(24)	23412	1800	380	79	1808276	69743
UNIVERSITY OF KENTUCKY	(25)	21477	1601	119	47	1792048	39004
UNIV. OF MASSACHUSETTS-AMHERST	(26)	25537	2167	282	53	1730872	75945
UNIV. OF CONNECTICUT-STORRS	(27)	20190	1969	161	64	1657850	61923
SOUTHERN ILLINOIS-CARBONDALE	(28)	23035	901	164	20	1630825	44886
SUMMATION 13 LIBR.1.5-3 MLLN.	(30)	337913	31963	3106	789	25291295	830317
AVERAGE OF 13 LIBR. 1.5-3 MLLN	(31)	25993	2459	239	59	1945484	63871
NUMBER OF LIBRARIES AVERAGED	(32)	13	13	13	13	13	13
LIBRARIES UNDER 1.5 MLLN.VOLS							
UNIVERSITY OF NEBRASKA-LINCOLN	(36)	22492	1416	191	42	1494040	52525
PURDUE UNIVERSITY-LAFAYETTE	(37)	32921	3339	387	53	1424896	36744
FLORIDA STATE UNIVERSITY	(38)	21258	2130	332	62	1393156	54455
UNIV. OF TENNESSEE-KNOXVILLE	(39)	29418	2747	186	41	1356369	40406
IOWA STATE UNIVERSITY	(40)	24914	1930	239	70	1349909	53835
OKLAHOMA STATE UNIVERSITY	(41)	24010	1221	121	37	1253052	23250
COLORADO STATE UNIVERSITY	(42)	19248	1786	141	34	1232923	46509
VIRGINIA POLYTECH.INST.& ST.U.	(43)	22806	2076	124	48	1226037	84770
SUMMATION OF 8 LIBR.UNDER 1.5M	(45)	197067	16645	1721	387	10730382	392494
AVERAGE OF LIBR.UNDER 1.5 MLLN	(46)	24633	2081	215	48	1341298	49062
NUMBER OF LIBRARIES AVERAGED	(47)	8	8	8	8	8	8
SUMMATION OF 27 INST.COMPARED	(49)	804065	85945	7915	1731	61921307	1938167
AVERAGE OF 27 ARL LIBRARIES	(50)	29780	3183	293	64	2293382	71784
NUMBER OF LIBRARIES AVERAGED	(51)	27	27	27	27	27	27

Table 14 (continued)

LIBRARY SIZES COMPARED 1979-80
ARL PEER GROUP - UNIVERSITY OF MISSOURI-COLUMBIA PROGRAM PLAN

OCTOBER 25, 1981

ARL PEER LIBRARIES RANKED BY SIZE		VOLS/ENRL 79-80INDX	ACQ/ENRL 79-80INDX	ACQ RATE TO VOLS.	INDX GRAD /ENRL '79	ACQUIS IF NRM 3.13%	DIFF'RNCE ACTL-NORM
IBRARIES OVER 3 MILLION VOLS							
NIVERSITY OF ILLINOIS-URBANA	(3)	142.5	4.25	0.0298	0.122	185823	8666-
NIVERSITY OF MICHIGAN	(4)	130.1	2.45	0.0188	0.171	163836	65408-
NIVERSITY OF MINNESOTA (MSP)	(5)	68.4	1.23	0.0180	0.141	119177	50623-
NDIANA UNIVERSITY-BLOOMINGTON	(6)	115.1	4.03	0.0350	0.121	117663	13813
NIVERSITY OF WISCONSIN-MADISN	(7)	83.1	3.58	0.0431	0.169	113671	42814
HIO STATE UNIVERSITY	(8)	64.0	1.51	0.0236	0.112	110489	27233-
UMMATION 6 LARGER LIBRARIES	(10)	803.2	17.05	0.1683	0.836	810658	95302-
VERAGE OF 6 LARGER LIBRARIES	(11)	96.3	2.66	0.0276	0.139	135110	15884-
UMBER OF LIBRARIES AVERAGED	(12)	6.0	6.00	6.0000	6.000	6	6
IBRARIES 1.5-3 MILLION VOLS.							
ICHIGAN STATE UNIVERSITY	(16)	52.0	1.93	0.0371	0.074	81801	15035
NIVERSITY OF IOWA	(17)	93.8	3.19	0.0341	0.123	71842	6454
NIVERSITY OF KANSAS	(18)	91.5	2.87	0.0314	0.096	67247	21[illegible]
NIVERSITY OF MISSOURI-COLMBIA	(19)	83.4	2.07	0.0248	0.094	63121	13098-
NIVERSITY OF GEORGIA	(20)	77.3	3.57	0.0462	0.115	62151	29598
TATE UNIV.OF NEW YORK-BUFFALO	(21)	69.3	1.84	0.0266	0.164	60610	9116-
NIVERSITY OF COLORADO-BOULDER	(22)	81.5	1.80	0.0221	0.126	57996	16973-
OUISIANA STATE UNIVERSITY	(23)	71.5	2.43	0.0340	0.073	57048	4882
NIVERSITY OF OKLAHOMA	(24)	77.2	2.98	0.0386	0.077	56599	13144
NIVERSITY OF KENTUCKY	(25)	83.4	1.82	0.0218	0.075	56091	17087-
NIV. OF MASSACHUSETTS-AMHERST	(26)	67.8	2.97	0.0439	0.085	54176	21769
NIV. OF CONNECTICUT-STORRS	(27)	82.1	3.07	0.0374	0.098	51891	10032
OUTHERN ILLINOIS-CARBONDALE	(28)	70.8	1.95	0.0275	0.039	51045	6159-
UMMATION 13 LIBR.1.5-3 MLLN.	(30)	1001.6	32.50	0.4254	1.238	791618	38699
VERAGE OF 13 LIBR. 1.5-3 MLLN	(31)	74.8	2.46	0.0328	0.095	60894	2977
UMBER OF LIBRARIES AVERAGED	(32)	13.0	13.00	13.0000	13.000	13	13
IBRARIES UNDER 1.5 MLLN.VOLS							
NIVERSITY OF NEBRASKA-LINCOLN	(36)	68.4	2.34	0.0352	0.063	46763	5762
URDUE UNIVERSITY-LAFAYETTE	(37)	43.3	1.12	0.0258	0.101	44599	7855-
LORIDA STATE UNIVERSITY	(38)	65.5	2.56	0.0391	0.100	43606	10849
NIV. OF TENNESSEE-KNOXVILLE	(39)	46.1	1.37	0.0298	0.093	42454	2048-
OWA STATE UNIVERSITY	(40)	54.2	2.16	0.0399	0.077	42252	11583
KLAHOMA STATE UNIVERSITY	(41)	52.2	0.97	0.0186	0.051	39221	15971-
OLORADO STATE UNIVERSITY	(42)	64.1	2.42	0.0377	0.093	38590	7919
IRGINIA POLYTECH.INST.& ST.U.	(43)	53.8	3.72	0.0691	0.091	38375	46395
UMMATION OF 8 LIBR.UNDER 1.5M	(45)	445.5	16.65	0.2951	0.670	335861	56633
VERAGE OF LIBR.UNDER 1.5 MLLN	(46)	54.5	1.99	0.0366	0.084	41983	7079
UMBER OF LIBRARIES AVERAGED	(47)	8.0	8.00	8.0000	8.000	8	8
UMMATION OF 27 INST.COMPARED	(49)	2050.3	66.18	0.8888	2.744	1938137	30
VERAGE OF 27 ARL LIBRARIES	(50)	77.0	2.41	0.0313	0.107	71783	1
UMBER OF LIBRARIES AVERAGED	(51)	27.0	27.00	27.0000	27.000	27	27

SUMMARY OF GROUP AVERAGES--ARL PEER LIBRARY COMPARISON WITH UNIV. OF MISSOURI-COLUMBIA

TABLE 15
OCTOBER 23, 1981
PAGE 1

SUMMARY ARL PEER COMPARISON GROUPS		ENROLLMNT INDEX	FULL-TIME GRAD SDTS	PH.D.'S AWARDED	NO.PH.D. FIELDS	TOTAL NO. VOLUMES	NET VOLS. ACQUIRED
1978-79 AVERAGES OF GROUPS							
UNIVERSITY OF MISSOURI-COLUMBIA	(2)	23545	2184	281	58	1984632	55400
BIG 8/ARL MEMBER LIBRARIES							
SUMMATION BIG 8/ARL MEMBERS	(5)	180155	13052	1345	380	11575451	358086
AVERAGE OF 7 BIG 8/ARL LIBRAR.	(6)	22879	1865	192	51	1653636	51155
BIG 10-PUBLIC ARL LIBRARIES							
SUMMATION BIG 10-PUBLIC INST.	(9)	363085	47044	4702	781	31610483	836195
AVERAGE OF 9 BIG10-PUBLIC LIBR	(10)	40343	5227	522	87	3512276	92911
OTHER SELECT ARL LIBRARIES							
SUMMATION OF 11 OTHER SELECTED	(13)	254451	21838	2128	551	17399841	685887
AVERAGE OF 11 OTHER ARL LIBRAR	(14)	23132	1985	193	50	1581804	62353
SUMMATION OF 27 INST. COMPARED	(16)	777691	81934	8175	1692	60585775	1880168
AVERAGE OF 27 ARL LIBRARIES	(17)	28803	3035	303	63	2243918	69636
1979-80 AVERAGES OF GROUPS							
UNIVERSITY OF MISSOURI-COLUMBIA	(20)	24169	2261	228	59	2016647	50023
BIG 8/ARL MEMBER LIBRARIES							
SUMMATION OF BIG 8/ARL MEMBERS	(23)	165206	13735	1610	385	11923279	357864
AVERAGE OF 7 BIG8/ARL LIBRAR.	(24)	23601	1962	230	55	1703326	51123
BIG 10-PUBLIC ARL LIBRARIES							
SUMMATION OF BIG10-PUBLIC INST	(27)	376790	47433	4208	821	32233239	927232
AVERAGE OF 9 BIG10-PUBLIC LIBR	(28)	41866	5270	468	91	3581471	103026
OTHER SELECTED ARL LIBRARIES							
SUMMATION OF 11 OTHER SELECTED	(31)	262070	24777	2097	525	17764789	653071
AVERAGE OF 11 OTHER ARL LIBR.	(32)	23825	2252	191	48	1614981	58370
SUMMATION OF 27 INST. COMPARED	(34)	804066	85945	7915	1731	61921307	1938167
AVERAGE OF 27 ARL LIBRARIES	(35)	29780	3183	293	64	2293382	71784
SIZE GROUPS ARL PEERS 1979-80							
LIBRARIES OVER 3 MILLION VOLS							
SUMMATION 6 LARGER LIBRARIES	(40)	269085	37337	3088	575	25899630	715356
AVERAGE OF 6 LARGER LIBRARIES	(41)	44848	6223	515	96	4316605	119226
LIBRARIES 1.5-3 MILLION VOLS							
SUMMATION OF 13 MIDSIZE LIBRAR	(44)	337913	31963	3106	769	25291295	830317
AVERAGE OF 13 MIDSIZE LIBRAR.	(45)	25993	2459	239	59	1945484	63871
LIBRARIES UNDER 1.5 MLLN.VOLS							
SUMMATION OF 8 SMALLER LIBRAR.	(48)	197067	16845	1721	387	10730382	392494
AVERAGE OF 8 SMALLER LIBRARIES	(49)	24633	2081	215	48	1341298	49062
SUMMATION OF 27 INST.COMPARED	(51)	804065	85945	7915	1731	61921307	1938167
AVERAGE OF 27 ARL PEER LIBRAR	(52)	29780	3183	293	64	2293382	71784

TABLE 15 (continued)

SUMMARY OF GROUP AVERAGES--ARL PEER LIBRARY COMPARISON WITH UNIV. OF MISSOURI-COLUMBIA

OCTOBER 23, 1981

SUMMARY ARL PEER COMPARISON GROUPS		VOLS/ENRL INDEX	ACQ/ENRL INDEX	ACQ.RATE TO VOLS.	GRAD STDTS /ENROLLMT	ACQUIS IF 3.13% AVG	DIFF'RNCE ACTL-AVG.
1978-79 AVERAGES OF GROUPS							
UNIVERSITY OF MISSOURI-COLUMBIA	(2)	84.3	2.35	0.0279	0.093	61524	6124-
BIG 8/ARL MEMBER LIBRARIES							
SUMMATION BIG 8/ARL MEMBERS	(5)	72.3	2.24	0.0309	0.081	358839	753-
AVERAGE OF 7 BIG 8/ARL LIBRAR.	(6)	72.3	2.24	0.0309	0.081	51263	108-
BIG 10-PUBLIC ARL LIBRARIES							
SUMMATION BIG 10-PUBLIC INST.	(9)	87.1	2.30	0.0265	0.130	979925	143730-
AVERAGE OF 9 BIG10-PUBLIC LIBR	(10)	87.1	2.30	0.0265	0.130	108881	15970-
OTHER SELECT ARL LIBRARIES							
SUMMATION OF 11 OTHER SELECTED	(13)	68.4	2.70	0.0394	0.086	539395	146492
AVERAGE OF 11 OTHER ARL LIBRAR	(14)	68.4	2.70	0.0394	0.086	49036	13317
SUMMATION OF 27 INST. COMPARED	(16)	77.9	2.42	0.0310	0.105	1878159	2009
AVERAGE OF 27 ARL LIBRARIES	(17)	77.9	2.42	0.0310	0.105	69561	74
1979-80 AVERAGES OF GROUPS							
UNIVERSITY OF MISSOURI-COLUMBIA	(20)	83.4	2.07	0.0248	0.094	63121	13098-
BIG 8/ARL MEMBER LIBRARIES							
SUMMATION OF BIG 8/ARL MEMBERS	(23)	72.2	2.17	0.0300	0.083	373199	15335-
AVERAGE OF 7 BIG8/ARL LIBRAR.	(24)	72.2	2.17	0.0300	0.083	53314	2191-
BIG 10-PUBLIC ARL LIBRARIES							
SUMMATION OF BIG10-PUBLIC INST	(27)	85.5	2.46	0.0288	0.126	1008900	81668-
AVERAGE OF 9 BIG10-PUBLIC LIBR	(28)	85.5	2.46	0.0288	0.126	112100	9074-
OTHER SELECTED ARL LIBRARIES							
SUMMATION OF 11 OTHER SELECTED	(31)	67.8	2.49	0.0368	0.095	556038	97033
AVERAGE OF 11 OTHER ARL LIBR.	(32)	67.8	2.49	0.0368	0.095	50549	8821
SUMMATION OF 27 INST. COMPARED	(34)	77.0	2.41	0.0313	0.107	1938137	30
AVERAGE OF 27 ARL LIBRARIES	(35)	77.0	2.41	0.0313	0.107	71783	1
SIZE GROUPS ARL PEERS 1979-80							
LIBRARIES OVER 3 MILLION VOLS							
SUMMATION 6 LARGER LIBRARIES	(40)	603.2	17.05	0.1683	0.836	810658	95302-
AVERAGE OF 6 LARGER LIBRARIES	(41)	96.3	2.86	0.0276	0.139	135110	15884-
LIBRARIES 1.5-3 MILLION VOLS							
SUMMATION OF 13 MIDSIZE LIBRAR	(44)	1001.6	32.50	0.4254	1.238	791618	38699
AVERAGE OF 13 MIDSIZE LIBRAR.	(45)	74.8	2.46	0.0328	0.095	60894	2977
LIBRARIES UNDER 1.5 MLLN.VOLS							
SUMMATION OF 8 SMALLER LIBRAR.	(48)	445.5	16.65	0.2951	0.670	335861	56633
AVERAGE OF 8 SMALLER LIBRARIES	(49)	54.5	1.99	0.0366	0.084	41983	7079
SUMMATION OF 27 INST.COMPARED	(51)	2050.3	66.19	0.8888	2.744	1938137	30
AVERAGE OF 27 ARL PEER LIBRAR	(52)	77.0	2.41	0.0313	0.107	71783	1

Libraries of the University of Missouri-Columbia:
LIBRARY EVALUATION AND FACILITIES PROGRAM PLAN

THE SASAKI/MACKEY/MIRA/MARTIN TEAM
December 1981

APPENDIX 2.2

Chapter 2
Section B

Tables 16 through 18

PROJECTIONS OF UMC LIBRARIES

UNIVERSITY OF MISSOURI-COLUMBIA
LIBRARY PROGRAM PLANNING
SASAKI/MACKEY/MIRA/MARTIN TEAM
DECEMBER 1981

CHAPTER 2
SECTION 8

TABLE 16
PROGRAM PLAN ALTERNATIVES
COMBINED LIBRARY COLLECTIONS
(REV 12/16/81)

CATEGORY	1980-81 NO.UNITS	PLANNING CRITERIA	NET ADDED VOLS/YEAR	COLLECTION GROWTH OPTIONS: PROJECTED 5 YEARS	PROJECTED 10 YEARS	PROJECTED 20 YEARS
COMBINED LIBRARIES PROJECTIONS						
COLLECTIONS: RATE-OF-GROWTH ALTERNATIVES			1	5	10	20
1980-81 ACTUAL:	2068788	.02520365	52141	2329493	2590198	3111608
PROJECTION OPTIONS				COMBINED LIBRARIES		
NET ACQUISITIONS/YR BOUND VOLUMES:				PROJECTED TOTAL BOUND VOLUMES		
OPTION T-1: 40000		NET ACQ/YR	40000	2268788	2468788	2868788
OPTION T-2: 55000		NET ACQ/YR	55000	2343788	2818788	3168788
OPTION T-3: 70000		NET ACQ/YR	70000	2418788	2768788	3468788
RECOMMENDED:100000		NET ACQ/YR	100000	2568788	3068788	4068788
ALLOCATION OF COLLECTIONS AMONG UMC LIBRARY UNITS:						
PROGRAMMED OPTIONS:						
LAW LIBRARY (L-1)	149003			LAW LIBRARY BOUND VOLUMES		
OPTION I-3.13% ACQ		(ARL PEER AVERAGE)		173800	202800	276000
OPTION J-6000/YR ACQ		(MIN.PREFERRED)		179000	209000	269000
OPTION K-9000/YR ACQ		(PREFERRED)		194000	239000	329000
OPTION L-5%/YR ACQ		(IDEAL KEEP-UP RATE)		190170	242700	376500
HEALTH SCI (HS-1)	133640			HEALTH SCIENCES BOUND VOLUMES		
OPTION A-3.76%/YR AQ		(AVG.13-PEER MED SC)		160700	193300	279600
OPTION B-4.66%/YR AQ		(AVG.US MED SCHOOLS)		167800	210700	332300
OPTION C-5%/YR ACQ		(PREFERRED KEEP-UP)		170600	217700	354600
DIFFERENCE: COMBINED OPTIONS LESS LAW OPTION J, HEALTH SCIENCES OPTION B:						
80-81 RATE LESS J,B	1786145	AV/YR,20Y	36208	1982693	2170498	2510308
OPTION T-1 LESS J,B	1786145	AV/YR,20Y	24067	1921988	2049089	2267488
OPTION T-2 LESS J,B	1786145	AV/YR,20Y	39067	1996988	2199088	2567488
OPTION T-3 LESS J,B	1786145	AV/YR,20Y	54067	2071988	2349088	2867488
RECOMMENDED LESS J,B	1786145	AV/YR,20Y	84067	2221988	2649088	3467488
ALLOCATION TO OTHER BRANCH LIBRARIES:						
				OTHER BRANCHES BOUND VOLUMES		
ENGINEERING LIBRARY	54877	NET ACQ/Y	1500	62477	69977	84977
GEOLOGY LIBRARY	35926	NET ACQ/Y	800	39926	43926	51926
JOURNALISM LIBRARY	19158	NET ACQ/Y	350	20908	22658	26158
MATH SCIENCE LIBRARY	23875	NET ACQ/Y	0	0	0	0
DALTON RESEARCH CNTR	2585	NET ACQ/Y	50	2835	3085	3585
VETERINARY MED LIBR	29428	NET ACQ/Y	1750	38178	46928	64428
TOTAL OTHER BRANCHES	165949		4450	164324	186574	231074
ALLOCATION TO ELLIS (COMBINED LESS LAW-J, HEALTH SCI-B, OTHER BRANCHES):						
				ELLIS LIBRARY BOUND VOLUMES		
80-81 RATE(52141/YR)	1620200	AV/YR,20Y	32950	1818400	1983900	2279200
OPTION T-1(40000/YR)	1620200	AV/YR,20Y	20800	1757700	1862500	2036400
OPTION T-2(55000/YR)	1620200	AV/YR,20Y	35800	1832700	2012500	2336400
OPTION T-3(70000/YR)	1620200	AV/YR,20Y	50800	1907700	2162500	2636400
RECOMMEND(100000/YR)	1620200	AV/YR,20Y	80800	1057700	2482500	3238400

STUDENT READER DEMAND-COMBINED LIBRARIES				FTE STUDENTS/READER STATIONS		
CATEGORY	1980-81 NO.UNITS	PLANNING CRITERIA	CHANGE RATIOS	PROJECTED 5 YEARS	PROJECTED 10 YEARS	PROJECTED 20 YEARS
PROJECTED FULL-TIME EQUIVALENT STUDENTS				FULL-TIME EQUIVALENT STUDENTS		
COMPREHENSIVE PLAN TASK 3 PROJECTIONS						
OPTION 1: 1980 CONSTANT:						
LOWER DIVISION	10076	CONSTANT	0.00	10076	10076	10076
UPPER DIVISION	7724	CONSTANT	0.00	7724	7724	7724
SUBTOTAL UNDERGR	17800		0.00	17800	17800	17800
FIRST PROFESSIONAL	1347	CONSTANT	0.00	1347	1347	1347
GRADUATE	2774	CONSTANT	0.00	2774	2774	2774
TOTAL OPTION 1	21921			21921	21921	21921
OPTION 2: DECREASE(UNDERGR.15%,GRAD.10%,1ST PRF.CONSTANT):						
LOWER DIVISION	10076	DECREASE	-0.15	9690	9320	8565
UPPER DIVISION	7724	DECREASE	-0.15	7430	7245	6565
SUBTOTAL UNDERGR	17800		-0.15	17120	16565	15130
FIRST PROFESSIONAL	1347	CONSTANT	(ROUNDED)	1350	1350	1350
GRADUATE	2774	DECREASE	-0.10	2705	2635	2500
TOTAL OPTION 2	21921		-.134	21175	20550	18980
OPTION 3:DECR.LD 17%,INCR.UD 8%,INCR.GRAD&FP 45.6%):						
LOWER DIVISION	10076	DECREASE	-.173	9175	8665	8330
UPPER DIVISION	7724	INCREASE	.079	7895	8235	8330
SUBTOTAL UNDERGR	17800		-.064	17070	16900	16660
FIRST PROFESSIONAL	1347	INCREASE	.456	1570	1750	1960
GRADUATE	2774	INCREASE	.458	3230	3610	4040
TOTAL OPTION 3	21921		.0337	21870	22260	22660
LIBRARY READER STATION OPTIONS(TABLE 8):				RATIO OF STATIONS	STUDENT READER STATIONS	
25% FTE STUDENTS:						
OPTION 1 CONSTANT	5480	FTES X		0.25	5480	5480	5480
OPTION 2 DECREASE	5480	FTES X		0.25	5294	5138	4745
OPTION 3 INCREASE	5480	FTES X		0.25	5468	5565	5665
33% FTE--ACRL NORM:						
OPTION 1 CONSTANT	7307	FTES X		0.33	7307	7307	7307
OPTION 2 DECREASE	7307	FTES X		0.33	7058	6850	6327
OPTION 3 INCREASE	7307	FTES X		0.33	7290	7420	7553
WICHE-PMS (NCHEMS) MANUAL 4 CRITERIA:						
OPTION 1 CONSTANT						
LOWER DIVISION	2015	LD X		0.20	2015	2015	2015
UPPER DIV.HUM/SS	1367	59%UD X		0.30	1367	1367	1367
UPPER DIV.SCIENCE	633	41%UD X		0.20	633	633	633
GRAD&FP HUM/SS	661	45%GRFP X		0.40	661	661	661
GRAD&FP SCIENCE	404	44%GRFP X		0.25	404	404	404
LAW (CONST.450)	338	450 LAW X		0.75	338	338	338
TOTAL OPT-1 WICHE	5418				5418	5418	5418

CONTINUED NEXT PAGE>

CATEGORY	1980-81 NO.UNITS	PLANNING CRITERIA	RATIO OF STATIONS	PROJECTED 5 YEARS	PROJECTED 10 YEARS	PROJECTED 20 YEARS
WICHE-PMS MANUAL 4 CRITERIA (CONTINUED):				STUDENT READER STATIONS		
OPTION 2 DECREASE						
LOWER DIVISION	2015	LD X	0.20	1938	1864	1713
UPPER DIV.HUM/SS	1367	59%UD X	0.30	1315	1282	1162
UPPER DIV.SCIENCE	633	41%UD X	0.20	609	594	538
GRAD&FP HUM/SS	661	45%GRFP X	0.40	649	636	612
GRAD&FP SCIENCE	404	44%GRFP X	0.25	397	389	374
LAW (CONST.450)	338	450 LAW X	0.75	338	338	338
TOTAL OPT-2 WICHE	5418			5245	5103	4737
OPTION 3 -LD,+UDGR						
LOWER DIVISION	2015	LD X	0.20	1835	1733	1636
UPPER DIV.HUM/SS	1367	59%UD X	0.30	1397	1458	1474
UPPER DIV.SCIENCE	633	41%UD X	0.20	647	675	683
GRAD&FP HUM/SS	661	45%GRFP X	0.40	774	857	963
GRAD&FP SCIENCE	404	44%GRFP X	0.25	473	524	589
LAW INCR.450->650	338	INCR.LAWX	0.75	375	450	488
TOTAL OPT-3 WICHE	5418			5502	5696	5862
ALLOCATION BY LIBRARY UNIT:		PROGRAMMED OPTIONS				
LAW SCHOOL OPT-3 PRJ	449	OPTION 3 INCR.46%		500	600	650
OPT.3,H 75% RDRS	223	<ACTUAL	0.75	375	450	488
LAW LIBRARY OPTIONS:	223	LAW ENRLMNT OPTIONS		450	500	600
OPTION F 50% STATN	225	MINIMAL	0.50	225	250	300
OPTION G 65% STATN	292	ACCPTBL	0.65	293	325	390
OPTION H 75% STATN	337	PREFER	0.75	338	375	450
HEALTH SCIENCES LIBRARY:	20-YR	PRJ.FTES OPTIONS:		OPTION-1	OPTION-2	OPTION-3
SCHOOL OF NURSING	228	FTE STUDENTS		230	200	260
HEALTH-RELATED PRF	162	FTE STUDENTS		160	140	190
SCHOOL OF MEDICINE	805	FP&GRAD FTES		805	770	1553
TOTAL HEALTH SC FTE	1195	FTE STUDENTS		1195	1110	2003
STUDENT READERS	299	STATIONS	0.25	299	278	501
OTHER BRANCH LIBRARIES:	20-YR	PRJ.FTES OPTIONS:		OPTION-1	OPTION-2	OPTION-3
ENGINEERING FTES	1210	FTE STUDENTS		1210	1035	1290
ENGINEERING RDRS	105	UNDGR 20%;GRAD 25%		250	232	270
GEOLOGY MAJORS/FTE	170	FTE STUDENTS		170	140	200
GEOLOGY LIBRARY	54	UNDGR 20%;GRAD 25%		37	33	45
JOURNALISM FTES	665	FTE STUDENTS		665	575	795
JOURNALISM LIBR.	87	UNDGR 30%;GRAD 40%		221	192	270
MATH SCIENCES LIBR	27	REC.TRANS TO ELLIS		0	0	0
DALTON RSRCH LIBR.	13	ASSUME 46% INCR		20	20	20
VETERINARY MED.FTE	333	FTE STUDENTS		333	330	490
VET MED LIBRARY	146	UNDGR 20%;GRAD 25%		85	84	122
OTHER BRANCH READERS	432			614	561	727
20-YEAR WICHE PRJCTN	5418	OPTIONS 1, 2, AND 3		5418	4737	5862
LESS LAW OPT.H+HLTH SCI+OTHER BRANCHES = BALANCE TO	1068	BRANCH LIBRARY RDRS		1250	1213	1677
ELLIS LIBRARY RDRS.	4351	ELLIS LIBRARY RDRS		4168	3524	4185

CATEGORY	COMBINED LIBRARY PROJECTIONS 1980-81 NO.UNITS	PLANNING CRITERIA	GROWTH CRITERIA	PROJECTED LIBRARY STAFFING PROJECTED 5 YEARS	PROJECTED 10 YEARS	PROJECTED 20 YEARS
COMPUTED BY WCPE BUDGET FORMULA		ON TASK 3 OPTION-1		USERS;OPT.T-2 VOLUME GROWTH:		
USER BASED STAFF	80.84	BASED ON TABLE 9		176.33	176.33	176.33
MAINTENANCE STAFF	102.99	BASED ON TABLE 16		224.65	251.01	303.73
NEW RESOURCE ACQ.	32.80	BASED ON OPT.T-2		71.78	71.78	71.78
BASE STAFFING	7.33	BASED ON 8 BRNCHS		16.00	16.00	16.00
TOTAL STAFF UNITS	224.06	MAXIMUM UNITS		488.76	515.12	567.84
BUDGETED POSITIONS	224.06	BDGT RATE	0.64	312.81	329.68	383.42
ALLOCATION BY UNIT:	1980-81	BASIS OF ALLOCATION		PROJECTED STAFF BY LIBRARY		
PROFESSIONAL STAFF:						
ENGINEERING LIBR.	1.00	80-81 RATIO PROF		1.80	1.89	2.09
GEOLOGY LIBRARY	0	ASSUME 1 PROF		1.00	1.00	1.00
HEALTH SCIENCES	7.00	FROM TABLE HS-3		12.00	12.00	12.00
JOURNALISM LIBRARY	2.00	80-81 RATIO PROF		3.60	3.79	4.18
LAW LIBRARY	5.00	FROM TABLE L-4, J		6.00	6.00	6.00
MATH SCIENCES LIBR	0	REC.TO ELLIS		0.00	0.00	0.00
DALTON RSRCH CNTR	1.00	ASSUME 1 PROF		1.00	1.00	1.00
VETERINARY MED.	1.00	80-81 RATIO PROF		1.80	1.89	2.09
BRANCH PRFSNL STAFF	17.00			27.19	27.58	28.35
ELLIS PRFSNL STAFF	41.00	BALANCE OF PRFSNL		77.08	82.31	92.78
TOTAL PROFESSIONAL	58.00	ASSUMES 1/3 PRFSNL		104.27	109.89	121.14
SUPPORT STAFF (HRLY ASST.FTE ALLOC BY SUPPORT STAFF RATIO):						
ENGINEERING LIBR.	2.50	80-81 RATIO SUPPORT		3.14	3.31	3.65
GEOLOGY LIBRARY	1.88	80-81 RATIO SUPPORT		2.36	2.49	2.74
HEALTH SCIENCES	6.89	FROM TABLE HS-3		24.00	24.00	24.00
JOURNALISM LIBRAR.	2.50	80-81 RATIO SUPPORT		3.14	3.31	3.65
LAW LIBRARY	6.26	FROM TABLE L-4,J		12.00	12.00	12.00
MATH SCIENCES LIBR	1.88	REC.TO ELLIS		0.00	0.00	0.00
DALTON RSRCH CNTR	0.25	ASSUME 2/1 PROF		2.00	2.00	2.00
VETERINARY MED.	2.50	80-81 RATIO SUPPORT		3.14	3.31	3.65
BRANCH SUPPORT STAFF	24.67			49.79	50.43	51.70
ELLIS SUPPORT STAFF	141.39	BALANCE OF SUPPORT		158.74	169.36	190.58
TOTAL SUPPORT STAFF	166.06	ASSUMES 2/3 SUPPORT		208.54	219.78	242.28
TOTAL PROFESSIONAL	58.00			104.27	109.89	121.14
TOTAL PRFSNL+SUPPORT	224.06			312.81	329.68	363.42
RATIO: INCREASE PROJECTED/ACTUAL STAFF:						
PROFESSIONAL STAFF	1.00			1.80	1.89	2.09
SUPPORT STAFF	1.00			1.26	1.32	1.46
COMBINED RATIO	1.00			1.40	1.47	1.62

Libraries of the University of Missouri-Columbia:
LIBRARY EVALUATION AND FACILITIES PROGRAM PLAN

THE SASAKI/MACKEY/MIRA/MARTIN TEAM
December 1981

APPENDIX 3

Chapter 3

FACILITIES PROJECTIONS:

Tables E-1 through E-4
ELLIS LIBRARY

Tables L-1 through L-5
SCHOOL OF LAW LIBRARY

Tables HS-1 through HS-4
HEALTH SCIENCES LIBRARY

Tables H-1 through H-3
STATE HISTORICAL SOCIETY OF MISSOURI

UNIVERSITY OF MISSOURI-COLUMBIA
LIBRARY FACILITIES PROGRAM
SASAKI/MACKEY/MIRA/MARTIN TEAM
DECEMBER 1981

CHAPTER 3
SECTION A

TABLE E-1
ELLIS LIBRARY
STACK AREA PROJECTIONS
(REV 12/17/81)

ELLIS LIBRARY FACILITIES PROGRAM				PROJECTED STACK AREAS		
CATEGORY	1980-81 NO.UNITS	TYPE OF UNIT	PLANNING CRITERIA	PROJECTED 5 YEARS	PROJECTED 10 YEARS	PROJECTED 20 YEARS
BOUND VOLUME OPTIONS	ALLOCATED	TO ELLIS,	TABLE 16:		BOUND VOLUMES IN ELLIS	
80-1 RATE (52141)	1620200	AVG.+/YR>	32950	1818370	1983900	2279200
OPTION T-1 (40000)	1620200	AVG.+/YR>	20810	1757700	1862500	2036400
OPTION T-2 (55000)	1620200	AVG.+/YR>	35810	1832700	2012500	2336400
OPTION T-3 (70000)	1620200	AVG.+/YR>	50810	1907700	2162500	2636400
RECOMMEND:(100000)	1620200	AVG.+/YR>	80810	2057700	2462500	3236400
ALLOCATION BY TYPE:	REVOLVING	VOLS/SEC:	ASF/SEC:		ASSIGNABLE SQUARE FEET	
READING RM OPEN STK	250000	110	11	25000	25000	25000
GENERAL STACKS	750000	125	8.7	52200	52200	52200
SUBTOTAL CONSTANT	1000000	VOLS.	ASF=	77200	77200	77200
HIGH DENSITY STACKS	(PROJECTED	VOLUMES LESS	CONSTANT	OPEN &	GENERAL STACKS):	
80-81 ACQ RATE	620200	215	6	22838	27458	35699
OPTION T-1	(REVOLVE	215	6	21145	24070	28923
OPTION T-2	(GROWTH TO	215	6	23238	28256	37295
OPTION T-3	(HIGH DENS	215	6	25331	32442	45667
RECOMMENDED OPTION	(STACKS ->	215	6	29517	40814	62411
OTHER MATERIALS:	1980-81 UNITS	TYPE OF UNIT	GROWTH/ YEAR	PRJCTD PIECES	OTHER MATERIALS	
CURRENT PERIODICALS	15670	TITLES	75	15670	15670	15670
REFERENCE VOLUMES	3500	VOLUMES	400	5500	7500	11500
RESERVE BOOKS	7500	VOL EQUIV	CONSTANT	7500	7500	7500
GOVT. DOCS.UNACSND	165000	TITLES	18000	255000	345000	525000
RECORDINGS	10400	RECORDS	850	14650	18900	27400
MICROFORMS	2328500	PIECES	145000	3053500	3778500	5228500
RARE BOOK&SPEC.CLTN	16000	VOL EQUIV	600	19000	22000	28000
FLOOR AREAS OTHER MATERIALS:		ITEMS/SEC:	ASF/SEC:		ASSIGNABLE SQUARE FEET	
CURRENT PERIODICALS	6000	15	15	6000	6000	6000
SERIALS OPEN STACKS	2805	30	8.7	2804	2804	2804
REFERENCE STACKS	700	75	15	1100	1500	2300
GOV.DOCS.OPEN STACK	1436	1000	8.7	2219	3002	4568
RECORD SHELVING	180	500	8.7	255	329	477
MICROFORM CASES	2561	10000	11	3359	4156	5751
RARE BOOK STACKS	1638	85	8.7	1945	2252	2866
OTHER MATERIAL ASF	15319			17681	20043	24766
COMBINED COLLECTION FLOOR AREAS:				TOTAL ASSIGNABLE SQUARE FEET		
80-81 GROWTH RATE	67522=ASF EST.IN ELLIS			117719	124700	137664
OPTION T-1 + OTHER	NOW FOR COLLECTIONS			116026	121313	130889
OPTION T-2 + OTHER				118119	125499	139261
OPTION T-3 + OTHER				120212	129685	147633
RCMND OPTION+OTHER				124398	138057	164377

UNIVERSITY OF MISSOURI-COLUMBIA
LIBRARY FACILITIES PROGRAM
SASAKI/MACKEY/MIRA/MARTIN TEAM
DECEMBER 1981

CHAPTER 3
SECTION A

TABLE E-2
ELLIS LIBRARY
USER AREA PROJECTIONS
(REV 12/17/81)

ELLIS LIBRARY FACILITIES PROGRAM				PROJECTED ELLIS USER AREAS		
CATEGORY	1980-81 NO.UNITS	TYPE OF UNIT	PLANNING CRITERIA	PROJECTED OPTION-1	PROJECTED OPTION-2	PROJECTED OPTION-3
PROJECTED STUDENT READER STATION ALTERNATIVES:				/NO CHANGE	/DECREASE	/INCR.U&G
25% OF FTE STUDENTS	2484	(ROUNDED 20-YR)		5480	4750	5670
33% OF FTE STUDENTS	2484	"		7300	6330	7560
WICHE/PMS CRITERIA	2484	"		5420	4740	5810
ALLOCATION TO LAW	228	OPT.A,A,B @ 75%		340	340	375
ALLOC.TO HEALTH SCI	111	OPT.1,2,3 @ 25%		455	440	550
ALLOC.TO OTHER BRNCH	432	OPT.1,2,3 @ WICHE		615	560	730
SUBTOTAL OTHER LIBR	768			1410	1340	1655
BALANCE TO ELLIS	1718	WICHE/PMS CRITERIA		4010	3400	4205
FACULTY STUDIES	46	ALLOW FOR 5% FACLTY		115	100	130
FACULTY GENERAL USE	N.D.	ALLOW FOR 5% FACLTY		115	100	130
ALLOCATION BY TYPE:	CURRENT:	PRJCTED PERCENT	ASF/RDR STATION	ASSIGNABLE SQUARE FEET		
STUDY TABLES	1386	80.00	25	82500	70000	86700
SMALL CARRELS	202	10.00	30	12375	10500	13005
RESEARCH CARRELS	79	5.00	40	8250	7000	8670
AUDIO/VISUAL CRLS	0	1.50	40	2475	2100	2601
MICROFORM READERS	28	1.50	40	2475	2100	2601
GROUP STUDY ROOMS	0	1.00	25	1031	875	1084
LOUNGE READER AREA	43	1.00	30	1238	1050	1301
TYPING STATIONS	0	CONST. 5	30	150	150	150
SUBTOTAL GEN.READER	1718	100		110494	93775	116111
COMPUTER ACCESS:						
CATALOG TERMINALS	0	INCR.1/YR	40	200	400	800
ON-LINE SRCH TRMNL	0	INCR.2/YR	45	450	900	1800
SUBTOTAL COMPUTER ACCESS TERMINALS				650	1300	2600
FACULTY: STUDIES	46	5% FACLTY	70	8050	7000	9100
GENERAL USE	N.D.	5% FACLTY	25	2875	2500	3250
TOTAL USER AREAS	47300	<EST.1981 USER ASF		122069	104575	131061
COMBINED USER AREAS & COLLECTION OPTION	CURRENT ASF					
80-81 GROWTH RATE	128015	<CURRENT	E-1+USER	259733	242239	268725
OPTION T-1			20-YEAR	252958	235464	261950
OPTION T-2			PROJECTION	261330	243836	270322
OPTION T-3				269702	252208	278694
RECOMMENDED RATE				286448	268952	295438

UNIVERSITY OF MISSOURI-COLUMBIA
LIBRARY FACILITIES PROGRAM
SASAKI/MACKEY/MIRA/MARTIN TEAM
DECEMBER 1981

CHAPTER 3
SECTION A

TABLE E-3
ELLIS LIBRARY
STAFF OFFICE/SERVICE AREAS
(REV. 12/18/81)

ELLIS LIBRARY FACILITIES PROGRAM PLAN				PROJECTED STAFF/SERVICE AREAS		
CATEGORY	1980-81 NO.UNITS	TYPE OF UNIT	PLANNING CRITERIA	PROJECTED 5 YEARS	PROJECTED 10 YEARS	PROJECTED 20 YEARS
PROJECTED ELLIS LIBRARY STAFF (FROM TABLE 18): OPTIONS 1&T-2 LESS ALLOC.TO BRANCHES:				STAFF FULL-TIME EQUIVALENTS		
PROFESSIONAL STAFF	41.00	ALLOCATED TO ELLIS		77.08	82.31	92.78
SUPPORT STAFF(&HRLY)	124.33	ALLOCATED TO ELLIS		158.74	169.36	190.58
TOTAL STAFF FTE	165.33			235.82	251.67	283.36
ADMINISTRATION:	BASE UNITS		ASF/UNIT	ASSIGNABLE SQUARE FEET		
DIRECTOR	1	S/O DIR.	240	240	240	240
ASSOCIATE DIRECTOR	1	S/O CHR.	180	180	180	180
ASSISTANT DIRECTOR	2	S/O PRF	120	240	240	240
ADMIN.ASSISTANT	1	M/O CLR	100	100	100	100
SECRETARIAL/CLER	4	M/O CLR	90	360	360	360
CONFERENCE	8	CONF RM	25	200	200	200
OFFICE SERVICE	1	SERV	250	250	250	250
TOTAL ADMINISTRATION				1570	1570	1570
ACCESS SERVICES:						
ACCESS SRV HEAD	1	S/O CHR.	180	180	180	180
SECRETARIAL/RECP	1	M/O RCP	120	120	120	120
ACCESS SRV CONF.	6	CONF RM	25	150	150	150
SUBTOTAL				450	450	450
CIRCULATION DEPT.						
SUPERVISOR	1	WORK STA	120	120	120	120
CLERICAL STAFF	4	INCR.1/5Y	60	300	360	480
SERVICE DESK	2	WORK STA	100	200	200	200
SECURITY	4	WORK STA	120	480	480	480
SORTING/SHELVING	10	WS+SHLVG	120	1200	1200	1200
TERMINALS	4	VTR+2/5YR *	40	240	320	480
EQUIPMENT ROOM	2	SRV+1/5YR	120	360	480	720
SUBTOTAL				2900	3160	3680
RESERVE BOOKS						
HEAD	1	S/O PRF	120	120	120	120
SERVICE DESK	3	WORK STA	60	180	180	180
PROCESSING AREA	2	WORK STA	120	240	240	240
RESERVE SHELVING	8000	75	15	1600	1600	1600
SUBTOTAL				2140	2140	2140
INTERLIBRARY LOAN						
HEAD	1	S/O PRF	120	120	120	120
PROCESSING AREA	4	WS +1/5YR	120	600	720	960
TWX TERMINAL/COPY	2	TRM+2/5YR	40	160	240	320
MAIL WORKROOM	2	WORK STA	120	240	240	240
SUBTOTAL				1120	1320	1640
TOTAL ACCESS SERV				6610	7070	7910

CONTINUED NEXT PAGE

UNIVERSITY OF MISSOURI-COLUMBIA
LIBRARY FACILITIES PROGRAM
TABLE E-3 (CONTINUED)

CONTINUED TABLE E-3
ELLIS LIBRARY

CATEGORY	1980-81 NO.UNITS	TYPE OF UNIT	PLANNING CRITERIA	PROJECTED STAFF/SERVICE AREAS PROJECTED 5 YEARS	PROJECTED 10 YEARS	PROJECTED 20 YEARS
STAFF/SERVICE AREAS (CONTINUED)	BASE UNITS		ASF/UNIT	ASSIGNABLE SQUARE FEET		
REFERENCE SERVICES						
HEAD	1	S/O PRF	120	120	120	120
REFERENCE CNFRNC	6	CONF	25	150	150	150
GENERAL REF DESK	3	WORK STA	100	300	300	300
INFORMATION DESK	1	WORK STA	120	120	120	120
DIVISION REF DESKS	10	WORK STA	120	1200	1200	1200
DIVISION WORKROOMS	20	WORK STA	100	2000	2000	2000
TWX TERMINAL/COPY	10	TRM/PRNT	40	400	400	400
REFERENCE WORKRM	6	WORK STA	100	600	600	600
SUBTOTAL				4890	4890	4890
CATALOG						
CARD CATALOG CASES	45	INCR 1/YR	30	1500	1650	1950
CATALOG SERV.DESK	1	WORK STA	120	120	120	120
CATALOG TERMINALS	0	VTR+5/5YR	40	200	400	800
INDEXES-TABLE/SHLF	5000	75	15	1000	1000	1000
SUBTOTAL				2820	2820	2820
TECHNICAL SERVICES						
HEAD-TECHNICAL SRV	1	S/O CHR	180	180	180	180
SECRETARY	1	M/O RCPT	120	120	120	120
CONFERENCE ROOM	10	CONF	25	250	250	250
COLLECTION DEVELOP	1	S/O PROF	120	120	120	120
DEVELOPMENT WORKRM	4	WORK STA	100	400	400	400
CATALOG MAINT.HEAD	1	S/O PROF	120	120	120	120
CATALOG WORKROOM	10	VTR+2/5YR	110	1320	1540	1980
COLLECTN MAINT'NCE	5	WORK STA	120	600	600	600
MAINTENANCE EQUIP	5	WORK STA	120	600	600	600
CATALOG MONOGRAPHS	8	WORK STA	120	960	960	960
DATABASE SERVICES	10	WORK STA	120	1200	1200	1200
COMPUTER TERMINALS	4	VTR+2/5YR	40	240	320	480
ORDER SECTION	10	WORK STA	120	1200	1200	1200
ORDER TERMINALS	3	VTR+1/5YR	40	200	240	320
SERIALS WORKROOM	30	WORK STA	120	3600	3600	3600
SERIALS CTLG-FILES	10	SHLV-CSES	30	300	300	300
SUBTOTAL				11410	11750	12430
COPY SERVICE	5	WORK STA	120	600	600	600
SUPPLY ROOM	1	STORAGE	600	600	600	600
COMPUTER OPERATIONS	4	WORK STA	120	480	480	480
STAFF LOUNGE	30	LOUNGE	20	600	600	600
SUBTOTAL				2280	2280	2280
TOTAL STAFF/SERVICE	29261			29580	30380	31900

UNIVERSITY OF MISSOURI-COLUMBIA
LIBRARY FACILITIES PROGRAM
SASAKI/MACKEY/MIRA/MARTIN TEAM
DECEMBER 1981

CHAPTER 3
SECTION A

TABLE E-4
ELLIS LIBRARY
SUMMARY OF PROJECTIONS
(12/18/81)

ELLIS LIBRARY PROGRAM PLAN			PROJECTED FLOOR AREA OPTIONS		
CATEGORY	1980-81 NO.UNITS	OPTION PLANNING CRITERIA	PROJECTED 5 YEARS	PROJECTED 10 YEARS	PROJECTED 20 YEARS
COLLECTIONS IN ELLIS (FROM TABLES E-1,16):			ASSIGNABLE SQUARE FEET		
COLLECTION OPTIONS:	65500	<ASF NOW IN ELLIS		(ROUNDED)	
1980-81 GROWTH RATE	32850	<SAME ACQ/YR CONT'D>	117700	124700	137700
OPTION T-1 (40000)	20800	<AVG.VOLS/YR NET ACQ	116000	121300	130900
OPTION T-2 (55000)	35800	<AVG.VOLS/YR NET ACQ	118100	125500	139300
OPTION T-3 (70000)	50800	<AVG.VOLS/YR NET ACQ	120200	129700	147600
RECOMMENDED(100000)	80800	<AVG.VOLS/YR NET ACQ	124400	138100	164400
USER AREAS IN ELLIS: (FROM TABLES E-2,17):			20-YEAR ENROLLMENT GROWTH		
			OPTION-1	OPTION-2	OPTION-3
BY TASK 3 STUDENT LOAD PROJECTION OPTIONS:			(CONSTANT)	(DECREASE)	(INCREASE)
GEN.USER STATIONS	47300	<NOW/WICHE-PMS RATIO	110500	93800	116100
COMPUTER ACCESS VTR		INCREASE BY YEARS>	650	1300	2600
FACULTY STATIONS	2534	<NOW/VARY BY SCH/FTF	10925	9500	12350
TOTAL USER AREAS	49834		122075	104600	131050
STAFF OFFICE/SERVICE: (FROM TABLES E-3,18):			5-YEARS	10-YEARS	20-YEARS
STAFF FTE TO ELLIS	165.33	OPTION-1&OPTION T-2	235.82	251.67	283.36
OFFICE/SERVICE AREA			ASSIGNABLE SQUARE FEET		
ADMINISTRATION			1570	1570	1570
ACCESS SERVICES			6610	7070	7910
REFERENCE SERVICES			4890	4890	4890
CATALOG			2820	2820	2820
TECHNICAL SERVICES			11410	11750	12430
OTHER SERVICE			2280	2280	2280
TOTAL STAFF/SERVICE			29580	30380	31900
TOTALS BY COMBINATION OF OPTIONS:					
COLLECTION GROWTH OPTION T-1 (40000 VOLS/YR ACQ.)					
ENROLLMENT OPTION 1 (HOLD 1980 CONSTANT)			267655	273755	284875
ENROLLMENT OPTION 2 (DECR.UG-15%,GR-10%,FP SAME)			250180	256280	267400
ENROLLMENT OPTION 3 (LD -17%;UD+8%,GR&FP +46%)			276630	282730	293850
COLLECTION GROWTH OPTION T-2 (55000 VOLS/YR ACQ.)					
ENROLLMENT OPTION 1 CONSTANT			269755	277955	293275
ENROLLMENT OPTION 2 DECREASE			252280	260480	275800
ENROLLMENT OPTION 3 INCREASE			278730	286930	302250
COLLECTION GROWTH OPTION T-3 (70000 VOLS/YR ACQ.)					
ENROLLMENT OPTION 1 CONSTANT			271855	282155	301575
ENROLLMENT OPTION 2 DECREASE			254380	264680	284100
ENROLLMENT OPTION 3 INCREASE			280830	291130	310550
COLLECTION GROWTH "RECOMMENDED" (100000 VOLS/YR)					
ENROLLMENT OPTION 1 CONSTANT			276055	290555	318375
ENROLLMENT OPTION 2 DECREASE			258580	273080	300900
ENROLLMENT OPTION 3 INCREASE			285030	299530	327350

SCHOOL OF LAW LIBRARY PROGRAM PLAN				PROJECTED PROGRAM OPTIONS:		
CATEGORY	NO.UNITS 1980-81	PLANNING CRITERIA	AVG.RATE GROWTH/YR.	PROJECTED 5 YEARS	PROJECTED 10 YEARS	PROJECTED 20 YEARS
1. LAW ENROLLMENTS						
OPT. A-HOLD CONSTANT						
FALL 1980 MAJORS	449	HOLD 450	CONSTANT	450	450	450
AVG.SCH/LAW MAJOR	14.41		CONSTANT	14.41	14.41	14.41
STUDENT CREDIT HR	6489		CONSTANT	6485	6485	6485
OPT. B-TARGET 500	449		S—> 500	500	500	500
STUDENT CR.HRS.	6489		@14.41/S	7205	7205	7205
OPT. C-GROW TO 600	449		S—> 600	450	500	600
STUDENT CR.HRS.	6489		@14.41/S	6485	7205	8646
2. LAW FACULTY FTE	22.2	SCH/FTEF TEACHING LOAD	291.4			
OPT.D-SAME FAC.LOAD		CONSTANT SCH/FTEF		291.40	291.40	291.40
OPT.DA-CONSTANT LOAD	22.2	291.40	CONSTANT	22.25	22.25	22.25
OPT.DB-TARGET 500		291.40	S—> 500	24.73	24.73	24.73
OPT.DC-GROW TO 600	22.2	291.40	S—> 600	22.25	24.73	29.67
OPT.E-DECR.FAC.LOAD	291.40	DECREASE SCH/FTEF:		280.00	265.00	250.00
OPT.EA-CONST.STD.LD.		DECR.SCH/F	CONSTANT	23.16	24.47	25.94
OPT.EB-TO 500 STD.LD		DECR.SCH/F	S—> 500	25.73	27.19	28.82
OPT.EC-TO 600 STD.LD		DECR.SCH/F	S—> 600	23.16	27.19	34.58
3A.READER STATIONS	223	STATIONS /STUDENTS	49.67	ACCRED.MIN.=50%, PREF.MIN.65% RECOMMENDED 75%		
OPT.F-50% STA/ENRL	225	0.50				
OPT.FA-CONSTANT LOAD		0.50	CONSTANT	225	225	225
OPT.FB-TO 500 STD.LD		0.50	S—> 500	250	250	250
OPT.FC-TO 600 STD.LD		0.50	S—> 600	225	250	300
OPT.G 65% STA/ENRL	293	0.65				
OPT.GA-CONSTANT LOAD		0.65	CONSTANT	293	293	293
OPT.GB-TO 500 STD.LD		0.65	S—> 500	325	325	325
OPT.GC-TO 600 STD.LD		0.65	S—> 600	293	325	390
OPT.H-75% STA/ENRL	338	0.75				
OPT.HA-CONSTANT LOAD		0.75	CONSTANT	338	338	338
OPT.HB-TO 500 STD.LD		0.75	S—> 500	375	375	375
OPT.HC-TO 600 STD.LD		0.75	S—> 600	338	375	450
3B. BOUND VOLUMES	149000	VOLS.END 1980-81				
	6328	NET ACQ. (4.44%)				
PROJECTION OPTIONS						
OPT.I-3.13% NET ACQ	4664	AVG.ARL PEER CMPRSN		173800	202800	276000
OPT.J-6000/YR NET AQ	6000	NET ACQ.	+6000/YR	179000	209000	269000
OPT.K-9000/YR NET AQ	9000	NET ACQ.	+9000/YR	194000	239000	329000
OPT.L-5%/YR NET ACQ	7450	NET ACQ. 5%	NO.VOLS	190170	242700	376500

UNIVERSITY OF MISSOURI-COLUMBIA
LIBRARY PROGRAM PLANNING
SASAKI/MACKEY/MIRA/MARTIN TEAM
DECEMBER 1981

CHAPTER 3
SECTION B

TABLE L-2
SCHOOL OF LAW LIBRARY
PROJECTED READER FACILITIES
(REV 12/17/81)

SCHOOL OF LAW LIBRARY PROGRAM CATEGORY	1980-81 BASE YEAR	PLANNING CRITERIA	20-YEAR STUDENT SIZE OPTIONS OPT A=450	OPT B=500	OPT C=600
READER STATIONS	ACCRED.MIN.= 50%; PREF.MIN.= 65%; REC.NORM = 75%				
		STA/STDTS			
1980-81 ACTUAL READER STATIONS	223	49.67	TOTAL STUDENT READER STATIONS		
OPTION F: STUDENT READERS=50%		50.00	225	250	300
OPTION G: STUDENT READERS=65%		65.00	293	325	390
OPTION H: STUDENT READERS=75%		75.00	338	375	450
READER STATION TYPES	ASF/UNIT	TYPE RATIO	NO.READER STATIONS BY TYPE:		
READING ROOM TABLES	25	0.33			
OPTION F STUDENT READERS			74	83	99
OPTION G STUDENT READERS			97	107	129
OPTION H STUDENT READERS			112	124	149
STUDY CARRELS	30	0.40			
OPTION F STUDENT READERS			90	100	120
OPTION G STUDENT READERS			117	130	156
OPTION H STUDENT READERS			135	150	180
MICROFORM READERS & TERMINALS	35	0.17			
OPTION F STUDENT READERS			38	43	51
OPTION G STUDENT READERS			50	55	66
OPTION H STUDENT READERS			57	64	77
GROUP STUDY ROOMS	25	0.10			
OPTION F STUDENT READERS			23	25	30
OPTION G STUDENT READERS			29	33	39
OPTION H STUDENT READERS			34	38	45
COMPUTED ASSIGN.SQ.FT. FOR STUDENT READER STATIONS:			ASSIGNABLE SQUARE FEET		
OPTION F 50% RATE			6458	7175	8610
OPTION G 65% RATE			8409	9328	11973
OPTION H 75% RATE			9701	10763	12915
CONSTANT READER ALLOWANCES:	ASF/STA	NO.STTNS			
OTHER UNIVERSITY USERS	25	75	1875	1875	1875
EXTERNAL USERS	25	25	625	625	625
FACULTY STUDIES	68	10	680	680	680
SUBTOTAL OTHER USER ASF	CONSTANT	110	3180	3180	3180
COMBINED TOTALS READER AREAS:		STNS OPT C	ASF OPT A	ASF OPT B	ASF OPT C
OPTION F 50% STUDENT + OTHER USER STNS		410	9638	10355	11790
OPTION G 65% STUDENT + OTHER USER STNS		500	11589	12508	15153
OPTION H 75% STUDENT + OTHER USER STNS		560	12881	13943	16095

UNIVERSITY OF MISSOURI-COLUMBIA
LIBRARY PROGRAM PLANNING
SASAKI/MACKEY/MIRA/MARTIN TEAM
DECEMBER 1981

CHAPTER 3
SECTION B

TABLE L-3
SCHOOL OF LAW LIBRARY
PROJECTED COLLECTIONS AREAS
(REV 12/17/81)

SCHOOL OF LAW LIBRARY PROGRAM PLAN				PROJECTED COLLECTIONS/AREAS		
CATEGORY	NO.UNITS 1980-81	PLANNING CRITERIA	AVG.RATE GROWTH/YR.	PROJECTED 5 YEARS	PROJECTED 10 YEARS	PROJECTED 20 YEARS
BOUND VOLUMES	149000		1	5	10	20
OPT.I-3.13% NET ACQ	4684	AVG.ARL PEER CMPRSN		173800	202800	276000
OPT.J-6000/YR NET AQ	6000	NET ACQ. +6000/YR		179000	209000	269000
OPT.K-9000/YR NET AQ	9000	NET ACQ. +9000/YR		194000	239000	329000
OPT.L-5% NET ACQ/YR	7450	NET ACQ. 5% NO.VOLS		190170	242700	376500
OTHER MATERIALS						
CURRENT SERIAL TITL.	1545	TITLES +5 T/YR		1550	1555	1565
MICROFORMS (EST.)	170000	INCREASE 5%/YEAR		217000	277000	451000
SPECIAL COLLECTIONS	5000	EST.VOLS. 2%/YEAR		5520	5875	7285
COMPUTER DISKS/TAPES	NA	EST.1000 ITEMS/YEAR		5000	10000	20000
VOLS. BY STACK TYPE:	149000	80-1 BASE		PROJECTED BOUND VOLUMES		
READING ROOM SHLVG	EST.30000	CONST.VOLS.REVOLVE		30000	30000	30000
OPEN STACKS	EST.50000	CONST.VOLS.REVOLVE		50000	50000	50000
HIGH DENSITY STACKS	EST.79000	ALL INCR.->REVOLVE				
OPT.I-3.13%/YR ACQ	4684	3.13%/YR ->REVOLVE		93800	122800	196000
OPT.J-6000/YR RATE	6000	ACQ./YR. ->REVOLVE		99000	129000	189000
OPT.K-9000/YR RATE	9000	ACQ./YR. ->REVOLVE		114000	159000	249000
OPT.L-5%/YR RATE	7450	5%/YR ->REVOLVE		110170	162700	296500
FLOOR AREAS		UNIT TYPE	ASF/UNIT	ASSIGNABLE SQUARE FEET		
CURRENT SERIALS	1545	7T/CASE	15.00	3321	3332	3354
MICROFORMS	170000	1000/CASE	11	2387	3047	4961
SPECIAL COLLECTIONS	5000	10VOL/SEC	8.7	4802	5198	6338
COMPUTER TAPES/DISKS	NA	500/SEC	8.7	87	174	348
SUBTOTAL OTHER				10598	11751	15001
BOUND VOLUME STACKS						
READING ROOM SHELVG	30000	104V/SEC	8.7	2510	2510	2510
OPEN STACK SHELVING	50000	125V/SEC	8.7	3480	3480	3480
SUBTOTAL RDG.RM&STK	80000			5990	5990	5990
HIGH DENSITY STACKS:						
OPT.I-3.13%/YR RATE		215V/SEC	6	2618	3427	5470
OPT.J-6000/YR RATE		215V/SEC	6	2763	3600	5274
OPT.K-9000/YR RATE		215V/SEC	6	3181	4437	6949
OPT.L-5%/YR RATE		215V/SEC	6	3075	4540	8274
COMBINED TOTAL AREAS —FOR COLLECTIONS—	AVG.BOUND VOLS/ASF->20 YRS:			TOTAL ASSGN SF COLLECTIONS:		
AT 3.13%/YR RATE			10.43	19205	21168	26460
AT 6000/YEAR RATE			10.24	19350	21341	26265
AT 9000/YEAR RATE			11.78	19769	22178	27939
AT 5%/YR RATE			12.87	19662	22281	29265

UNIVERSITY OF MISSOURI-COLUMBIA
LIBRARY PROGRAM PLANNING
SASAKI/MACKEY/MIRA/MARTIN TEAM
DECEMBER 1981

CHAPTER 3
SECTION B

TABLE L-4
SCHOOL OF LAW LIBRARY
LAW LIBRARY STAFF PROJECTED
(REV. 12/17/81)

SCHOOL OF LAW LIBRARY PROGRAM PLAN				PROJECTED LIBRARY STAFFING		
CATEGORY PROJECTED STAFF	NO.UNITS 1980-81	PROJECTION RATES	PLANNING CRITERIA	PROJECTED 5 YEARS	PROJECTED 10 YEARS	PROJECTED 20 YEARS
NUMBER OF LAW STUDENTS: ENROLLMENT BASED OPTIONS:				OPTION A 450	OPTION B 500	OPTION C 600
STAFF PROJECTIONS:						
LAW LIBRARIAN	1.00	CONSTANT		1.00	1.00	1.00
USER SERVICES STAFF:		ENROLLMENT-BASED				
PROFESSIONAL STAFF	2.00	.445/100 ENRL		2.00	2.23	2.67
SUPPORT STAFF	3.00	[illegible]/USER PRF		4.01	4.45	5.34
STUDENT ASST.FTE	5.63	2.81/USER PRF		5.63	6.25	7.50
SUBTOTAL USER SV	10.63			11.63	12.93	15.51
TECHNICAL SERVICES:		ACQUISITION-BASED		5 YRS	10 YRS	20 YRS
ACQUISITION OPTIONS	NET ACQ.	79-80 VOL	RATE %			
ACTUAL 1980-81	6328	142675	4.44	AVERAGE	ANNUAL ACQUISITIONS	
OPTION I-3.13% ACQ	4466	"	3.13	4960	5800	7320
OPTION J-6000 ACQ.	6000	"	4.21	6000	6000	6000
OPTION K-9000 ACQ	9000	"	6.31	9000	9000	9000
OPTION L-5% ACQ.	7134	"	5.00	8234	10506	13380
TECHNICAL SERVICES STAFFING:				5 YRS	10 YRS	20 YRS
PROFESSIONAL STAFF	2.00	.32/1000 ACQ.				
OPT I-3.13% RATE			"	1.57	1.83	2.61
OPT J-6000 RATE			"	1.80	1.90	1.90
OPT K-9000 RATE			"	2.84	2.84	2.84
OPT L-5% RATE			"	2.60	2.59	4.59
SUPPORT STAFF	2.00					
OPT I		2/TECH PRF		3.14	3.66	5.22
OPT J			"	3.80	3.80	3.80
OPT K			"	5.68	5.68	5.68
OPT L			"	5.20	5.18	9.18
STUDENT ASST. FTE	3.75	1.88/TECH PRF				
OPT I			"	2.95	3.44	4.91
OPT J			"	3.57	3.57	3.57
OPT K			"	5.34	5.34	5.34
OPT L			"	4.89	4.87	8.63
COMBINED TECH SRVC	7.75					
OPT I				7.66	8.93	12.74
OPT J				9.27	9.27	9.27
OPT K				13.86	13.86	13.86
OPT L				12.69	12.64	22.40
COMBINED LIBRARY STAFFING: BY ENROLLMENT OPTIONS:				OPT A=450	OPT.B=500	OPT.C=600
BY ACQUISITION OPTIONS:				5 YRS.	10 YRS.	20 YRS.
OPTION I-3.31% ACQ. RATE	(USER SERVICES BY			20.30	22.86	29.25
OPTION J-6000 ACQ. RATE	ENROLLMENT OPTIONS;			21.91	23.20	25.78
OPTION K-9000 ACQ. RATE	TECHNICAL SERVICES			26.49	27.79	30.37
OPTION L-5% ACQ. RATE	BY ACQUIS. OPTIONS)			25.32	26.57	38.91

UNIVERSITY OF MISSOURI-COLUMBIA
LIBRARY PROGRAM PLANNING
SASAKI/MACKEY/MIRA/MARTIN TEAM
DECEMBER 1981

CHAPTER 3
SECTION B

TABLE L-5
SCHOOL OF LAW LIBRARY
STAFF OFFICE/SERVICE AREAS
AND SUMMARY OF PROJECTIONS
(REV.12/17/81)

SCHOOL OF LAW LIBRARY PROGRAM PLAN				PROJECTED LIBRARY STAFFING		
CATEGORY OFFICE/WORK STATION	INITIAL NO.UNITS	ASF/UNIT CRITERIA	GROWTH CRITERIA	PROJECTED 5 YEARS	PROJECTED 10 YEARS	PROJECTED 20 YEARS
	ENROLLMENT-BASED OPTIONS:			OPTION A	OPTION B	OPTION C
NUMBER LAW STUDENTS				450	500	600
LAW LIBRARIAN OFFICE	1.00	180	CONSTANT	180	180	180
SECRETARY	1.00	120	CONSTANT	120	120	120
SUBTOTAL LIBRARY OFFICE				300	300	300
USE SERVICE AREAS:						
USER SERV.OFFICE	1	120	CONSTANT	120	120	120
CIRCULATION DESK	2	120	ENRL VAR	240	267	320
CIRCULATION SERV.	1	200	CONSTANT	200	200	200
CATALOG FILES	10	12	OPT.K VOL	156	192	265
COMPUTER TERMINALS	3	35	INCR2/5YR	175	245	350
INDEX VOLUMES	100	.5	OPT K VOL	65	80	110
REFERENCE DESK	1	120	CONSTANT	120	120	120
REFERENCE SERVICE	1	200	CONSTANT	200	200	200
RESERVE DESK	1	120	CONSTANT	120	120	120
RESERVE SHELVING	2000	0.10	CONSTANT	200	200	200
PHOTOCOPY SERVICE	1	100	CONSTANT	100	100	100
SUBTOTAL USER SERV.				1696	1844	2105
TECHNICAL SERVICES:						
TECH.SRV. OFFICE	1	120	CONSTANT	120	120	120
TECH.SRV.WORK AREA	1	240	OPT.L ACQ	312	400	510
COMPUTER OPERATION	1	300	OPT.L ACQ	390	500	638
RECEIVING AREA	1	300	CONSTANT	300	300	300
SUBTOTAL TECHN.SERV.				1123	1320	1568
STAFF ROOM	5	30	CONSTANT	150	150	150
TOTAL OFFICE/WORK AREA				3269	3614	4124
COMPARISON WITH HIGH USER/COLLECTION SIZE OPTIONS:						
READER AREA OPTION H	75% LAW STUDENTS + OTHER			12881	13943	16095
COLLECTIONS OPTION L	ACQ.RATE AT 5%/YEAR			19662	22281	29265
COMBINED USER/COLLECTION OPTIONS H & L				32543	36224	45360
STAFF/SERVICE AS % READER/COLLECTION AREAS				10.05	9.98	9.09
COMBINED TOTALS H&L	12416<CURRENT		/PROJECTED>	35812	39838	49484

HEALTH SCIENCES LIBRARY PROGRAM PLAN — ACQUISITION/STACK AREA OPTIONS

CATEGORY	1980-81 NO.UNITS	PLANNING CRITERIA	GROWTH PER YEAR	PROJECTED 5 YEARS	PROJECTED 10 YEARS	PROJECTED 20 YEARS
BOUND VOLUMES	133640	VOL.79-80	1	5	10	20
ACQUISITION RATES:	4786	128854	.0371	TOTAL BOUND VOLUMES		
OPTION A-3.76% AVG 13 PEERS (79-80)	4845	PEER AVG.	.0376	160700	193300	279600
OPTION B-4.66% AVG US MED SH(79-80)	6005	MED SC AV	.0466	167800	210700	332300
OPTION C-5% UMCHSC PREFERED RATE	6443	PREF.AVG.	.05	170600	217700	354600
VOLS. BY STACK TYPE:	BASE			BOUND VOLUMES/STACK TYPE		
OPTION A-3.76% RATE	UNITS:		.0376	160700	193300	279600
MONOGRAPHS (40%)	53456	0.40		64280	77320	111840
OPEN STACKS	50000	INCREASE TO 100000		60000	70000	100000
HIGH DENSITY	3456	BALANCE->HIGH DENS.		4280	7320	11840
BOUND SERIALS(60%)	80184	0.60		96420	115980	167760
OPEN STACKS	30000	INCREASE TO 100000		60000	70000	100000
HIGH DENSITY	50184	BALANCE->HIGH DENS.		36420	45980	67760
OPTION B-4.66% RATE			.0466	167800	210700	332300
MONOGRAPHS (40%)		0.40		67120	84280	132920
OPEN STACKS	50000	INCREASE TO 100000		60000	70000	100000
HIGH DENSITY		BALANCE->HIGH DENS.		7120	14280	32920
BOUND SERIALS(60%)		0.60		100680	126420	199380
OPEN STACKS	30000	INCREASE TO 100000		60000	70000	100000
HIGH DENSITY		BALANCE->HIGH DENS.		40680	56420	99380
OPTION C-5% RATE			.05	170600	217700	354600
MONOGRAPHS (40%)		0.40		68240	87080	141840
OPEN STACKS	50000	INCREASE TO 100000		60000	70000	100000
HIGH DENSITY		BALANCE->HIGH DENS.		8240	17080	41840
BOUND SERIALS(60%)		0.60		102360	130620	212760
OPEN STACKS	30000	INCREASE TO 100000		60000	70000	100000
HIGH DENSITY		BALANCE->HIGH DENS.		42360	60620	112760
STACK FLOOR AREAS:	BASE VOLS	VOLS/UNIT	ASF/UNIT	ASSIGNABLE SQUARE FEET		
OPEN STACKS:						
MONOGRAPHS	50000	125	8.7	4176	4872	6960
BOUND SERIALS	30000	85	8.7	6141	7165	10235
TOTAL OPEN STACK ASF	80000	INCR.TO 200000 VOLS		10317	12037	17195
HIGH DENSITY STACKS						
OPTION A-3.76% (HIGH DENS.		215	6.2	1174	1537	2295
OPTION B-4.66% (MONOGRAPHS		215	6.2	1378	2039	3815
OPTION C-5% (+SERIALS		215	6.2	1458	2241	4458
TOTAL OPTION A ASF (OPEN STACKS +		TOTAL ASF		11491	13574	19491
TOTAL OPTION B ASF (HIGH DENSITY		TOTAL ASF		11696	14075	21010
TOTAL OPTION C ASF (STACK OPTIONS		TOTAL ASF		11776	14277	21654

UNIVERSITY OF MISSOURI-COLUMBIA
LIBRARY PROGRAM PLANNING
SASAKI/MACKEY/MIRA/MARTIN TEAM
DECEMBER 1981

CHAPTER 3
SECTION C

TABLE HS-2
HEALTH SCIENCES LIBRARY
USER DEMAND ALTERNATIVES
(REV 12/16/81)

CATEGORY	HEALTH SCIENCES LIBRARY PROGRAM PLAN 1980-81 NO.UNITS	PLANNING CRITERIA	GROWTH CRITERIA	PROJECTED USER DEMAND OPTIONS PROJECTED (20-YEAR PROJECTION OPTIONS) OPTION-1 CONSTANT	PROJECTED OPTION-2 DECREASE (EXCPT FP)	PROJECTED OPTION-3 INCREASE (-L,+UGFP)
HEALTH SCIENCES LIBRARY USER ESTIMATES COMPREH.PLAN TASK-3 (12/15/81)		SCH/FTES	PER CENT CHANGE			
SCHOOL OF MEDICINE				PROJECTED FTE STUDENTS		
LOWER DIV. FTES	110	15	0,-15,-17	110	94	91
UPPER DIV. FTES	125	15	0,-15,+8	125	106	130
SUBTOT UNDGR FTES	235			235	200	221
GRAD/FP FTES	572	17.10	0, 0,+46	572	572	833
TOTAL MEDICINE FTES	807			807	772	1054
SCHOOL OF NURSING						
LOWER DIV. FTES	16	15	0,-15,-17	16	13	13
UPPER DIV. FTES	172	15	0,-15,+8	172	147	186
SUBTOT UNDGR FTES	188			188	160	199
GRADUATE FTES	41	12	0,-10,+46	41	37	59
TOTAL NURSING FTES	229			229	196	258
HEALTH-RELATED PRFN						
LOWER DIV. FTES	6	15	0,-15,-17	6	5	5
UPPER DIV. FTES	121	15	0,-15,+8	121	103	130
SUBTOT UNDGR FTES	126			126	107	135
GRADUATE FTES	36	12	0,-10,+46	36	33	53
TOTAL HEALTH-RELATED	163			163	140	188
TOTAL HEALTH SC.FTES	1198			1198	1108	1500
STUDENT READER STNS	300		0.25	300	277	375
COMP.PLAN FACULTY:	(INITIAL T-3 MODEL 11/2/81)			FACULTY & PROF STAFF FTEF:		
MEDICINE-HRP FCLTY	127	TCHG LOAD CONST/LEV		131	137	142
MED-HRP OTHER TCHG	25	0.20/FACULTY		26	27	28
OTHER PRF STAFF@.5	275	2.16/FACULTY		283	295	308
NURSING FACULTY	47	TCHG LOAD CONST/LEV		49	51	53
NURSING OTHER TCHG	3	0/FACULTY		3	3	3
OTHER PRF STAFF@.5	6	0/FACULTY		6	6	6
HOUSE STAFF	278	INCR. 25/5 YRS.		300	325	375
TOTAL FACULTY & PRF	482			498	519	540
READER STATIONS/OPTS	1980 FTE	RDRS/FTE	1980 STN	PROJECTED READER STATIONS		
UNDERGRADUATE	549	0.25	137	138	117	139
GRADUATE & 1ST PRF	648	0.25	162	162	160	236
FACULTY & PRF STF	482	0.25	121	124	130	135
HOUSE STAFF	278	0.10	28	30	35	40
TOTAL STATIONS	1959	<FTE USERS	448	454	439	548

UNIVERSITY OF MISSOURI-COLUMBIA
LIBRARY PROGRAM PLANNING
SASAKI/MACKEY/MIRA/MARTIN TEAM
DECEMBER 1981

TABLE HS-3
HEALTH SCIENCES LIBRARY
STAFF OFFICE/WORK STATIONS
(REV 12/17/81)

CATEGORY	HEALTH SCIENCES LIBRARY PROGRAM PLAN 1980-81 NO.UNITS	PLANNING CRITERIA	ASF/UNIT CRITERIA	PROJECTED OFFICE/WORK AREAS PROJECTED 5 YEARS	PROJECTED 10 YEARS	PROJECTED 20 YEARS
SOURCES: "PROGRAM FOR A COMBINED HEALTH SCIENCES LIBRARY-STORAGE FACILITY (1ST DRAFT, MAY 1, 1981) AND WORKSHEETS, "SQUARE FOOTAGE NEEDS, HEALTH SCIENCES LIBRARY" (PENCIL DATED 12/80); "BUILDING PROGRAM FOR THE NEW HEALTH SCIENCES LIBRARY OF THE UNIVERSITY OF MISSOURI-COLUMBIA (1978). UNIT AREA CRITERIA, WICHE-PMS HEFP&M, MANUAL 3, P.77; MANUAL 4, P.63.						
ADMINISTRATION:						
DIRECTOR	1	S/O CHR	180	180	180	180
ASSOCIATE DIRECTOR	1	S/O PROF	140	140	140	140
ADMIN. ASSISTANT	1	M/O ASST	120	120	120	120
SECRETARY	2	M/O SECR	90	180	180	180
CONFERENCE/RARE BK	10	CONF	20	200	200	200
SUBTOTAL-ADMINISTRTN				820	820	820
ACCESS SERVICES:						
HEAD ACCESS SERV.	1	S/O PROF	120	120	120	120
CIRCULATION SEC.HD	1	S/O PROF	120	120	120	120
CIRC/RESERVE DESK	3	WORK STA	100	300	300	300
RESERVE SHELVING	5000	125	8.7	348	348	348
CIRCUL.WORK ROOM	5	WORK STA	120	600	600	600
SORTING ROOM	2	WORK STA	100	200	200	200
USER PHOTOCOPY RM	3	WORK STA	100	300	300	300
SUBTOTAL-ACCESS SRV				1988	1988	1988
INFORMATION SERVICES						
HEAD INFRMTN SRV	1	S/O PROF	120	120	120	120
CATALOG FILES	4	SEC +1/5Y	30	150	180	240
CATALOG TERMINALS	4	TRM +2/5Y	40	240	320	480
INDEXES/ABSTRACTS	3500	25	15	2100	2100	2100
REFERNCE DESK	1	WORK STA	100	100	100	100
REFERENCE WORKROOM	9	WORK STA	120	1080	1080	1080
REFERENCE COLLECTN	1000	75	15	200	200	200
REFERENCE USERS	10	USER STA	25	250	250	250
INTERLIBR.LOAN-HEAD	1	S/O PROF	120	120	120	120
INTERLIBR.WRKROOM	6	WORK STA	120	720	720	720
TWX TERMINAL/COPY	4	WORK STA	50	200	200	200
ONLINE SEARCH TERMN	4	TRM +2/5Y	40	240	320	480
GOVERNMENT DOCS SERV	2	WORK STA	120	240	240	240
SUBTOTAL-INFORM.SERV				5760	5960	6330
MULTIMEDIA CENTER:						
MULTIMEDIA HEAD	1	S/O PROF	120	120	120	120
WORK ROOM	9	WORK STA	120	1080	1080	1080
EQUIPMENT ROOM	1	STORAGE	150	150	150	150
VIEWING/STUDY RMS	20	A/V STA	40	800	800	800
CARRELS A/V	50	A/V CRLS	35	1750	1750	1750
SUBTOTAL MULTIMEDIA				3900	3900	3900

TABLE CONTINUED NEXT PAGE->

UNIVERSITY OF MISSOURI-COLUMBIA
LIBRARY PROGRAM PLANNING
SASAKI/MACKEY/MIRA/MARTIN TEAM
DECEMBER 1981

CHAPTER 3
SECTION C

TABLE HS-4
HEALTH SCIENCES LIBRARY
SUMMARY OF FLOOR AREA OPTIONS
(REV 12/17/81)

CATEGORY	HEALTH SCIENCES LIBRARY PROGRAM PLAN 1980-81 NO.UNITS	ASF/UNIT CRITERIA	BASE PROJECTN	PROJECTED FLOOR AREA OPTIONS PROJECTED 5 YEARS	PROJECTED 10 YEARS	PROJECTED 20 YEARS
USER/READER AREAS IN PREVIOUS HEALTH SCIENCES LIBRARY FACILITIES PROGRAMS:						
HEALTH SCI ESTIMATES (1978 BUILDING PROGRAM; 12/80 WORKSHEETS; 5/1/81 DRAFT PGM)						
GENERAL READING	77	30	350	10500	10500	10500
STUDY ROOMS		30	100	3000	3000	3000
INDIVID CARRELS	10	30	175	5250	5250	5250
SPECIAL (E.G.A/V)	1	30	25	750	750	750
LOUNGE AREAS	23	30	50	1500	1500	1500
TOTAL 1978 USER AREA	111		700	21000	21000	21000
TOTAL DRAFT PGM 1981 (SHOWS LESS ASF FOR 700 RDRS)				14000	14000	14000
PROPOSED READER AREAS BASED ON COMP.PLAN TASK 3 OPTIONS & SPECIAL USER AREAS:						
PROJECTED READER STATIONS (FROM TABLE HS-2):				OPTION-1	OPTION-2	OPTION-3
STUDENT READER STNS	300	MED,HRP,NURSING		300	275	375
FACULTY&PRFSNL STNS	150	FAC,PRF,HOUSE STAFF		155	165	175
TOTAL USER STATIONS	450			455	440	550
PROPOSED READER MIX:	1981 ACT.	ASF/UNIT	STA/USERS			
READER TABLES	77	25	0.40	3000	2750	3750
STUDY CARRELS	10	35	0.20	2100	1925	2625
STUDY ROOMS.LOUNGE	23	25	0.10	750	688	938
SUBTOTAL STUDENT USE	110		0.70	5850	5363	7313
SPECIAL USER AREAS	(FROM TABLE HS-3:)		0.30			
CATALOG TERMINALS	4	40	6,8,12	240	320	480
REFERENCE USERS	10	25	CONSTANT	250	250	250
ONLINE SRCH TRMNLS	4	40	6,8,12	240	320	480
MULTIMEDIA VIEWING	20	40	CONSTANT	800	800	800
MULTIMED.A/V CRLS	50	35	CONSTANT	1750	1750	1750
SUBTOTAL SPECIAL USE	88		92,96,104	3280	3440	3760
FAC/STAFF GENRL.USE	-	30	0.75	3488	3713	3938
FACULTY STUDIES	0	70	0.25	2713	2888	3063
SUBTOTAL FACULTY USE				6200	6600	7000
TOTAL USER AREAS	TASK 3 PROJECTED OPTIONS 1,2,3			15330	15403	18073
PROJECTED STACK AREA (FROM REV.TABLE HS-1, GROWTH				5-YEARS	10-YEARS	20-YEARS
OPTION A	RATE OPTIONS, USING HIGHER			11491	13574	19491
OPTION B	GENERAL STACK ALTERNATIVE,			11696	14075	21010
OPTION C	LESS HIGH DENSITY STACKS)			11776	14277	21654
PROJECTED STAFF AREA (FROM TABLE HS-3 DEDUCTING						
OPTION A	SPECIAL USE AREAS LISTED			10670	10881	11240
OPTION B	ABOVE)			10827	11109	11661
OPTION C				10889	11202	11832
COMBINED PROJECTIONS VOLUME OPTS.A,B,C; USER OPTS>				OPTION-1	OPTION-2	OPTION-3
OPTION A TOTALS	ASSIGNABLE SQUARE FEET			37491	39858	48804
OPTION B TOTALS	ASSIGNABLE SQUARE FEET			37853	40587	50744
OPTION C TOTALS	ASSIGNABLE SQUARE FEET			37995	40882	51559

UNIVERSITY OF MISSOURI-COLUMBIA
LIBRARY PROGRAM PLANNING
SASAKI/MACKEY/MIRA/MARTIN TEAM
NOVEMBER 1981

TABLE H-1
PROJECTIONS OF COLLLECTIONS
AND FLOOR AREA REQUIREMENTS

STATE HISTORICAL SOCIETY OF MISSOURI

CATEGORY OF USE	NO.UNITS 1980-81	ASF/UNIT CRITERIA	AVG.RATE GROWTH/YR.	PROJECTED COLLECTION AREAS: PROJECTED 5 YEARS	PROJECTED 10 YEARS	PROJECTED 20 YEARS
1. COLLECTIONS:	YEARS PROJECTED:		1	5	10	20
BOUND VOLUMES (EST.ALLOC.STACK TYPE)						
IN READING ROOM SHELVING	50000	12	ROTATE 0	4167	4167	4167
IN GENERAL STACKS	150000	15	1000	10333	10667	11333
IN HIGH-DENSITY STACKS	230000	35	1000	6714	6857	7143
TOTAL BOUND VOLUMES	430000		2000	21214	21690	22643
NEWSPAPERS						
CURRENT TITLES RDG.RM.	323	7T/8.7SS	ROTATE 0	401	401	401
BOXES RECENT ISSUES	1200	8B/8.7SS	ROTATE 0	1305	1305	1305
BOUND NEWSPAPER VOLUMES	2800	30V/8.7SS	ROTATE 0	754	754	754
REELS MICROFILM NEWSPS.	38712	400/11CS	782	1172	1280	1495
TOTAL NEWSPAPERS				3633	3740	3955
MANUSCRIPTS-RECORDS						
LINEAR FEET SHELVED MS.	8000	18LF/8.7S	100	4108	4350	4833
MICROFILM REELS MS.(EST)	5000	400/11CS	50	144	151	165
MICROFILM REELS CENSUSES	5808	400/11CS	10	161	162	165
MAPS	6000	1000/42CS	50	263	273	294
PICTORIAL COLLECTION	10000	1000/8.7S	100	91	96	104
STATE ARCHIVE DOCUMENTS	22000	1000/8.7S	1000	235	278	365
TOTAL MANUSCR-RECORDS	56808			5003	5311	5927
SPECIAL COLLECTIONS						
RARE BOOKS VOLUMES (EST)	8000	10	100	850	900	1000
OTHER SPECIAL COLLECT'NS	NA	-	-	-	-	-
TOTAL SPECIAL COLLECTN	8000			850	900	1000
ARTS COLLECTION						
EXHIBIT WALL UNITS	60	25	ROTATE 0	1500	1500	1500
PAINTING STORAGE (EST)	1000	18/15'SC	10	875	917	1000
PRINTS, DRAWINGS (EST)	5000	500/8.7SS	100	96	104	122
TOTAL ART COLLECTION	6060		110	2471	2521	2622
TOTAL COLLECTIONS AREA				33170	34162	36147

UNIVERSITY OF MISSOURI-COLUMBIA
LIBRARY PROGRAM PLANNING
SASAKI/MACKEY/MIRA/MARTIN TEAM
NOVEMBER 1981

TABLE H-2
PROJECTIONS OF READER/USER
STATIONS AND FLOOR AREAS

STATE HISTORICAL SOCIETY OF MISSOURI

CATEGORY OF USE	NO.UNITS 1980-81	ASF/UNIT CRITERIA	AVG.RATE GROWTH/YR.	PROJECTED READER-SERVICE AREAS PROJECTED 5 YEARS	PROJECTED 10 YEARS	PROJECTED 20 YEARS
TOTAL PATRON CONTACTS	31600	-	.02	34760	37920	44240
EST.GROWTH OVER 1980				1.1	1.2	1.4
2. READER FACILITIES						
				NO. OF READER STATIONS		
REFERENCE READER STAT'NS	50	25	.02	55	60	70
NEWSPAPER READER STAT'NS	30	25	.02	33	36	42
NEWSPAPER MICROF.READERS	10	35	.02	11	12	14
MANUSCRIPT READER STATNS	10	30	.02	11	12	14
MANUSCRPT MICROF.READERS	15	35	.02	17	18	21
RARE BOOKS RDR STATIONS	10	30	.02	11	12	14
RESEARCH STUDIES	4	64	.02	4	5	6
OTHER READER STATIONS	7	50	.02	8	8	10
TOTAL READER STATIONS	136			150	163	190
FLOOR AREA READERS				ASSIGNABLE SQ. FT.		
REFERENCE READING ROOM		25		1375	1500	1750
NEWSPAPER READING ROOM		25		825	900	1050
NEWSPAPER MICROFILM RM		35		385	420	490
MANUSCRIPT READING ROOM		30		330	360	420
MANUSCRIPT MICROFILM RM		35		578	630	735
RARE BOOKS READING ROOM		30		330	360	420
RESEARCH STUDIES		64		282	307	358
OTHER READER STATIONS		50		385	420	490
TOTAL READER AREAS				4489	4897	5713
3. USER SERVICES						
CATALOG FILES (EST.)	25	30	1	900	1050	1350
CATALOG COMPUTER TERMNL	0	35	.2	35	70	140
CATALOG INDEX VOLS.(EST)	100	25V/15SS	.5	62	63	66
REFERENCE SRVC WORK STA.	1	100	0	100	100	100
MANUSCR.SERV. WORK STA.	1	100	0	100	100	100
OTHER USER SERV.WORK STA	1	100	0	100	100	100
TOTAL USER SERVICES				1297	1483	1856
TOTAL READER & USER SERV				5786	6380	7569
TOTAL COLLECTION AREA (FROM TABLE H-1)				33170	34162	36147
COMBINED AREAS READER-USER SERV.-COLLECTIONS				38956	40542	43716

UNIVERSITY OF MISSOURI-COLUMBIA
LIBRARY PROGRAM PLANNING
SASAKI/MACKEY/MIRA/MARTIN TEAM
NOVEMBER 1981 1981

TABLE H-3
PROJECTIONS OF STAFF OFFICE
& WORK STATION FLOOR AREAS

STATE HISTORICAL SOCIETY OF MISSOURI

CATEGORY OF USE	NO.UNITS 1980-81	ASF/UNIT CRITERIA	AVG.RATE GROWTH/YR.	PROJECTED STAFF OFFICE AREAS PROJECTED 5 YEARS	PROJECTED 10 YEARS	PROJECTED 20 YEARS
TOTAL PATRON CONTACTS	31800	-	.02	34760	37920	44240
EST.GROWTH OVER 1980				1.1	1.2	1.4
4. STAFF OFFICES				ASSIGNABLE SQ. FT.		
ADMINISTRATION:						
DIRECTOR	1	250	0	250	250	250
ASSOCIATE DIRECTOR	1	180	0	180	180	180
BUSINESS OFFICE	2	100	.02	220	240	280
OFFICE SERVICE AREA		200	0	200	200	200
OTHER	NA					
TOTAL ADMINISTRATION	4			850	870	910
LIBRARIES STAFF:						
SENIOR REFERENCE SPC.OFC	2	120	.02	264	288	336
REFERENCE SPEC. OFFICE	5	100	.02	550	600	700
LIBRARY CLERICAL WORK ST	1	100	.02	110	120	140
CATALOGER WORK AREA	1	200	.02	220	240	280
ACQUISITIONS SPC.WORK ST	1	200	.02	220	240	280
MANUSCRIPT SPEC. OFFICE	3	100	.02	330	360	420
TOTAL LIBRARIES STAFF	13			1694	1848	2156
INFORMATION SERVICE:						
SR.INFORMATION SPEC.OFFC	1	120	0	120	120	120
INFORMATION SPEC. OFFC	1	100	.02	110	120	140
SECRETARY	1	80	.02	88	96	112
TOTAL INFORMATION SVC	3			318	336	372
ART CURATOR	.5	180	0	180	180	180
CURATORIAL WORK AREA		200	0	200	200	200
TOTAL ART CURATOR				380	380	380
OTHER STAFF	NA	-	-	-	-	-
TOTAL STAFF OFFICES				3242	3434	3818
COLLECTIONS-READERS-USER SERVICE (FROM TABLE H-2)				38956	40542	43716
TOTAL AREA PROJECTED FOR STATE HISTORICAL SOCIETY	30861 IN ELLIS			42198	43976	47534
INCREASE OVER 1980	1.00			1.38	1.43	1.55

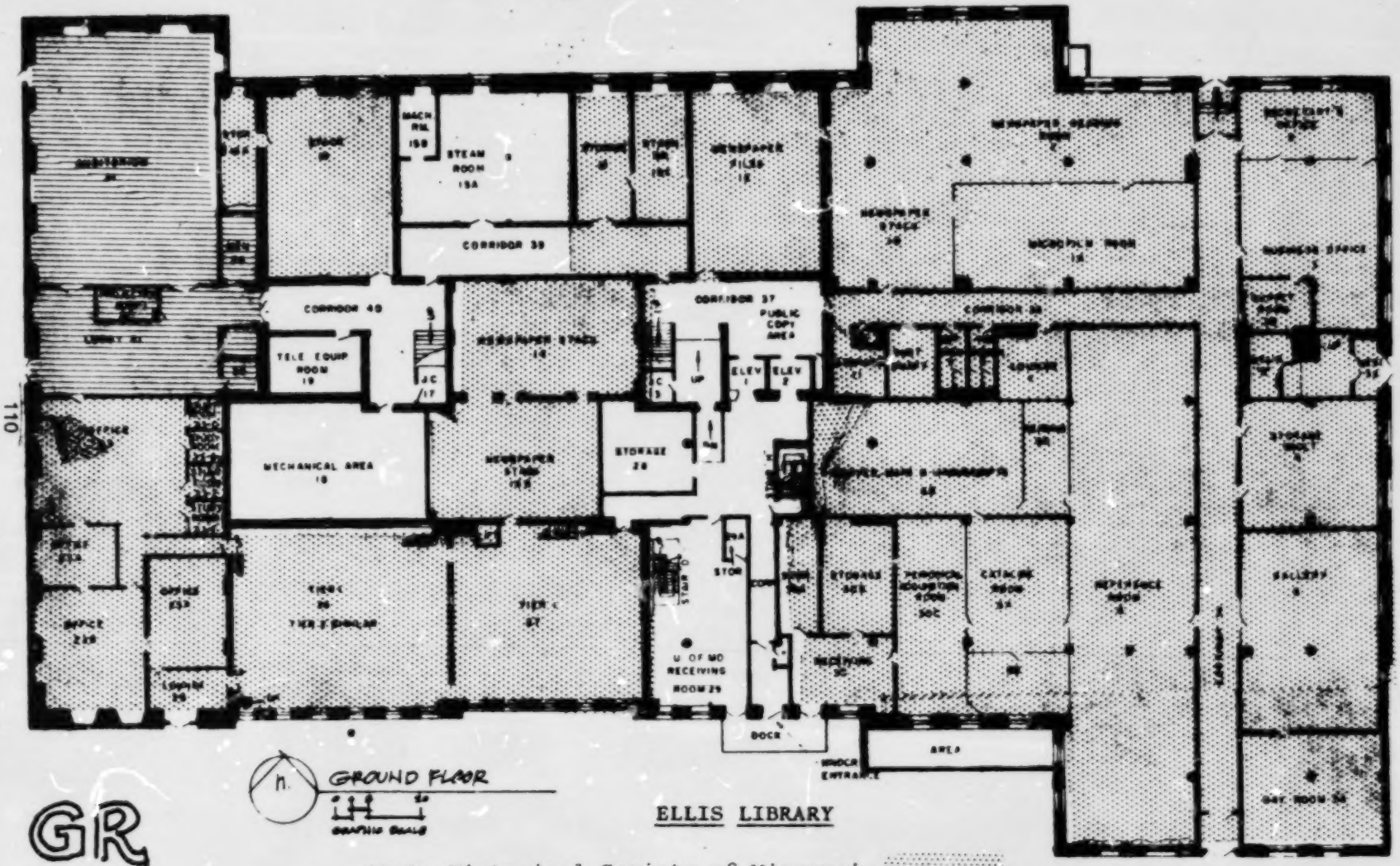
Libraries of the University of Missouri-Columbia:
LIBRARY EVALUATION AND FACILITIES PROGRAM PLAN

THE SASAKI/MACKEY/MIRA/MARTIN TEAM
December 1981

APPENDIX 4.1

FLOOR PLANS OF EXISTING LIBRARIES

Ellis Auditorium-

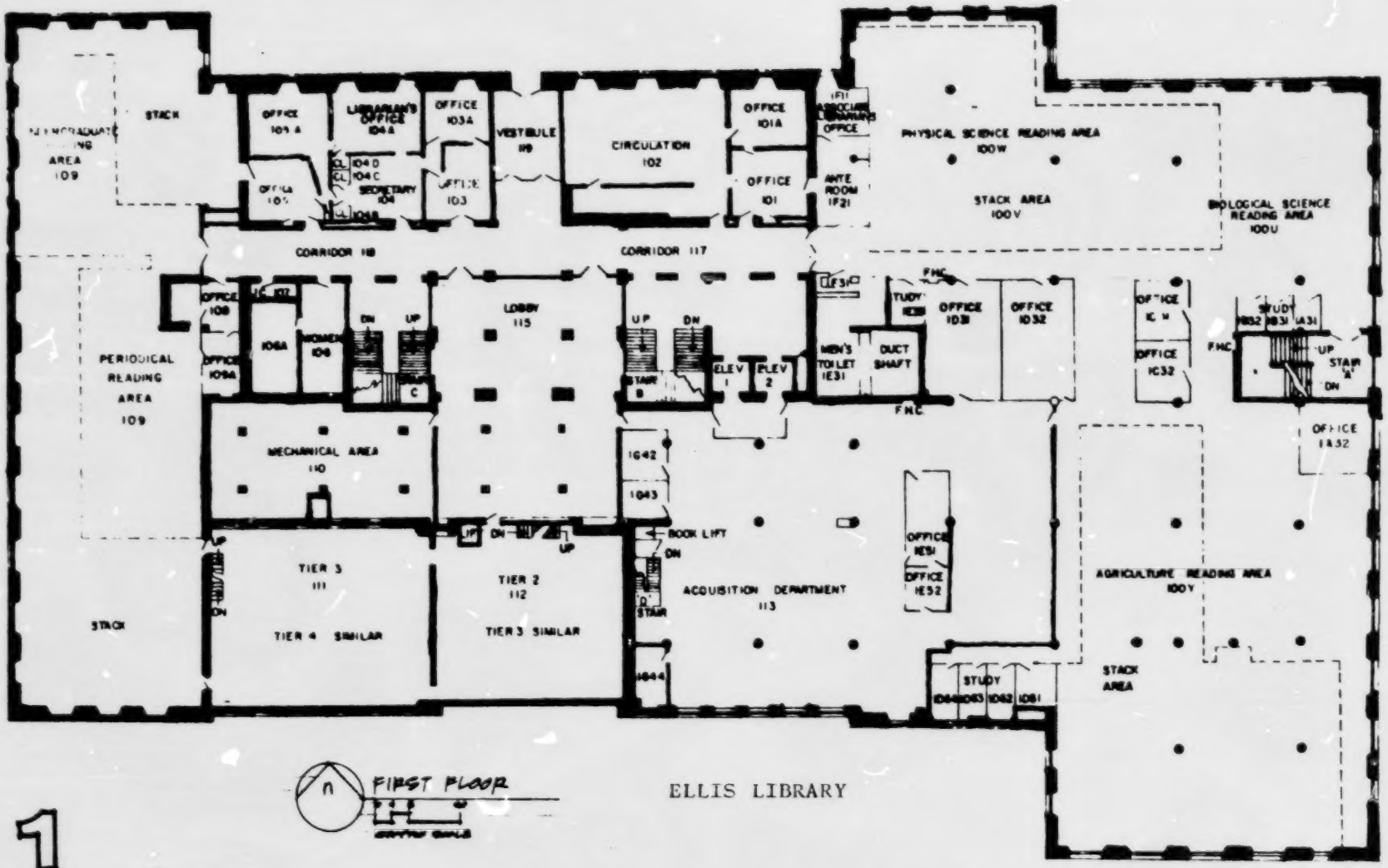


GROUND FLOOR

GR

ELLIS LIBRARY

State Historical Society of Missouri-



FIRST FLOOR

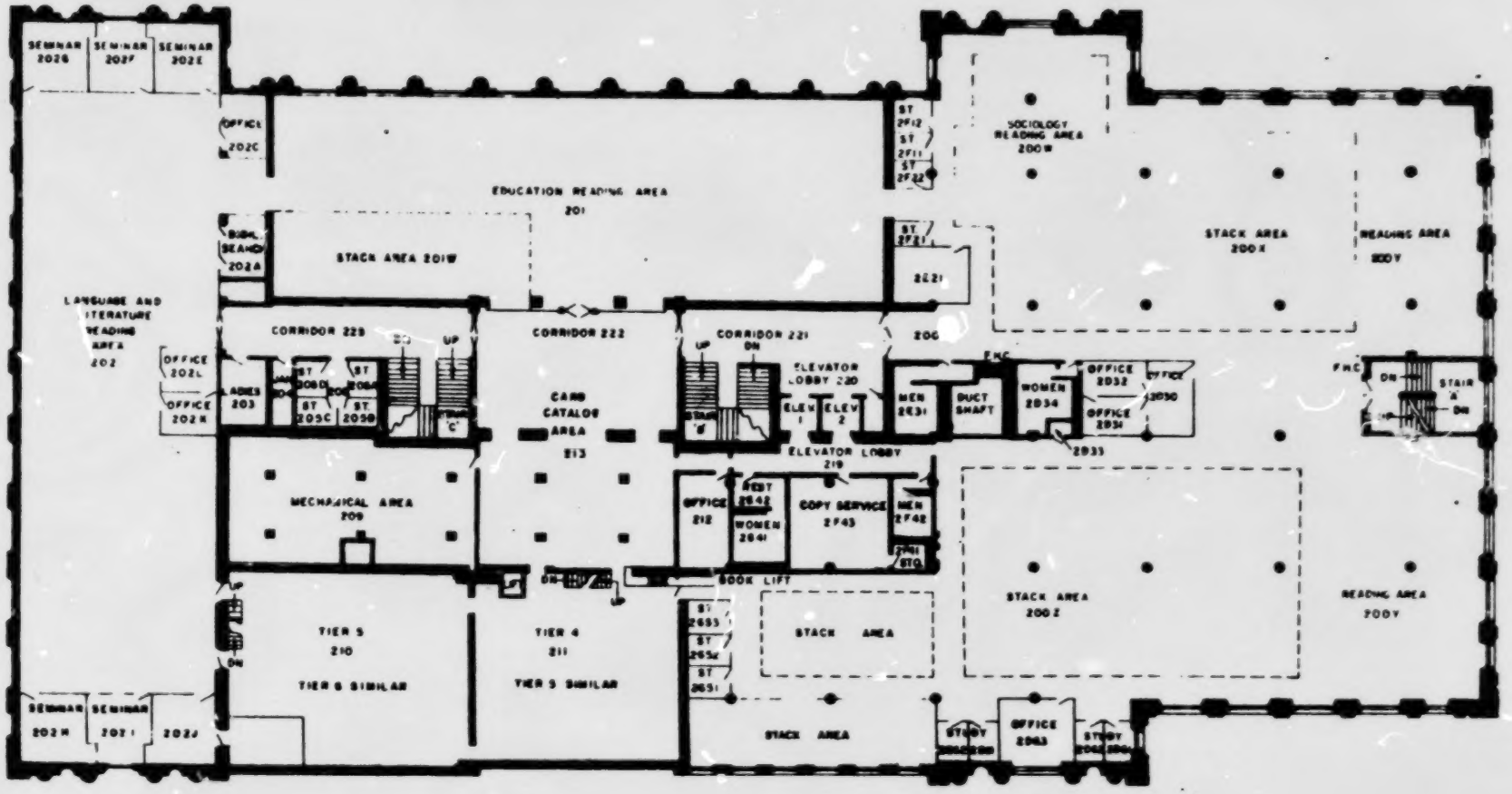
ELLIS LIBRARY

1

111

118

117



112

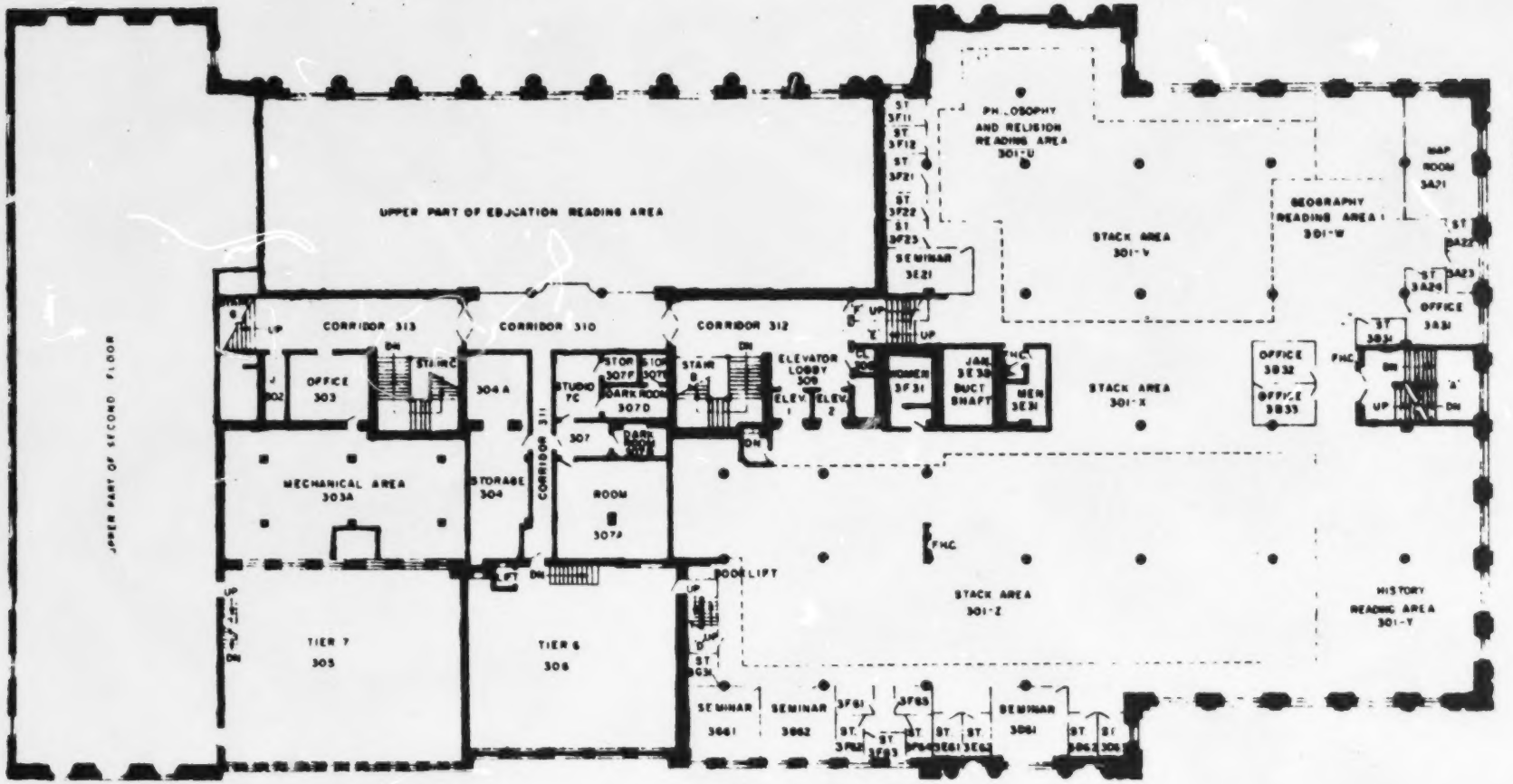
2

SECOND FLOOR

ELLIS LIBRARY

113

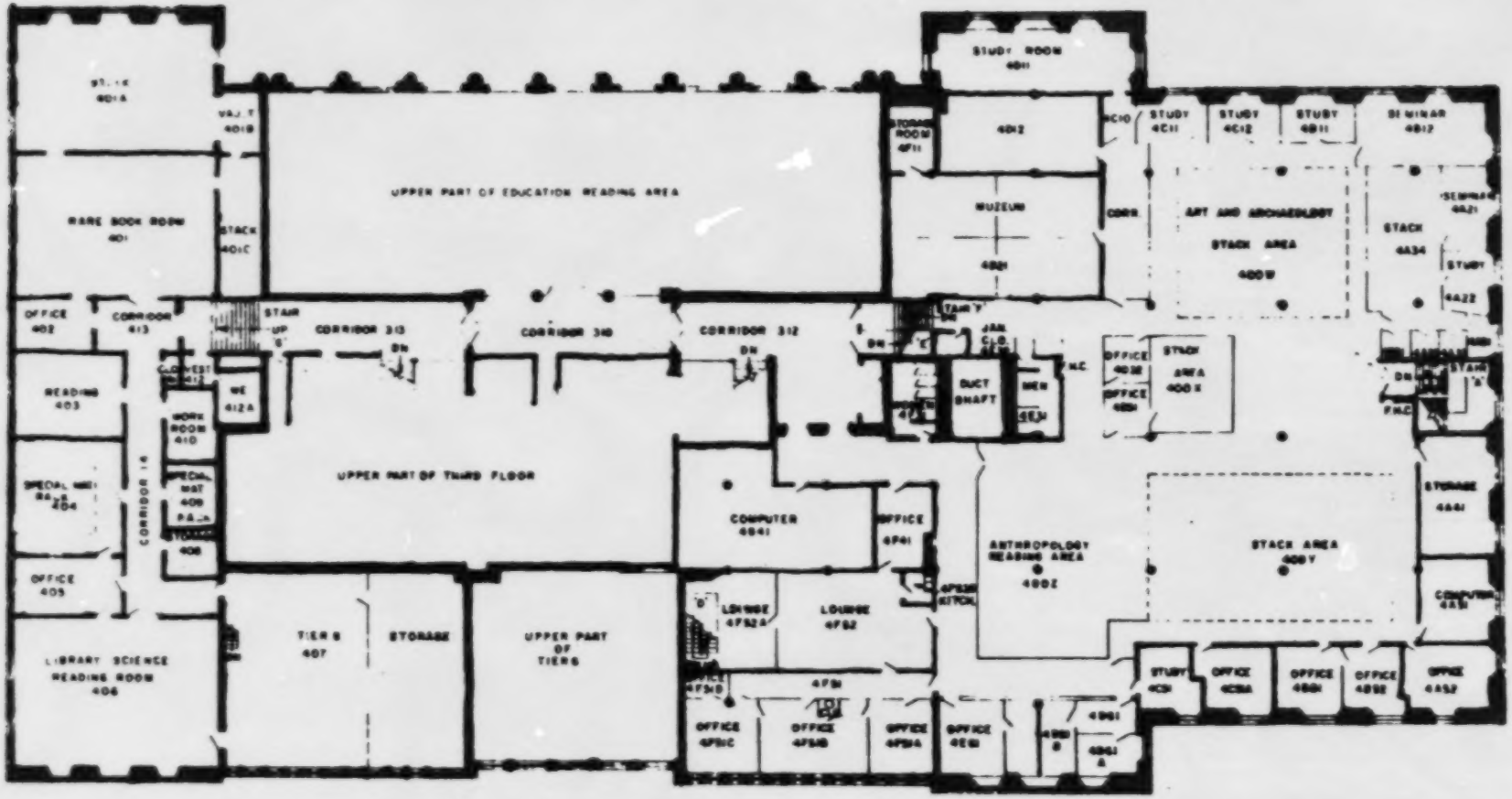
113



3

M. THIRD FLOOR — ELLIS LIBRARY

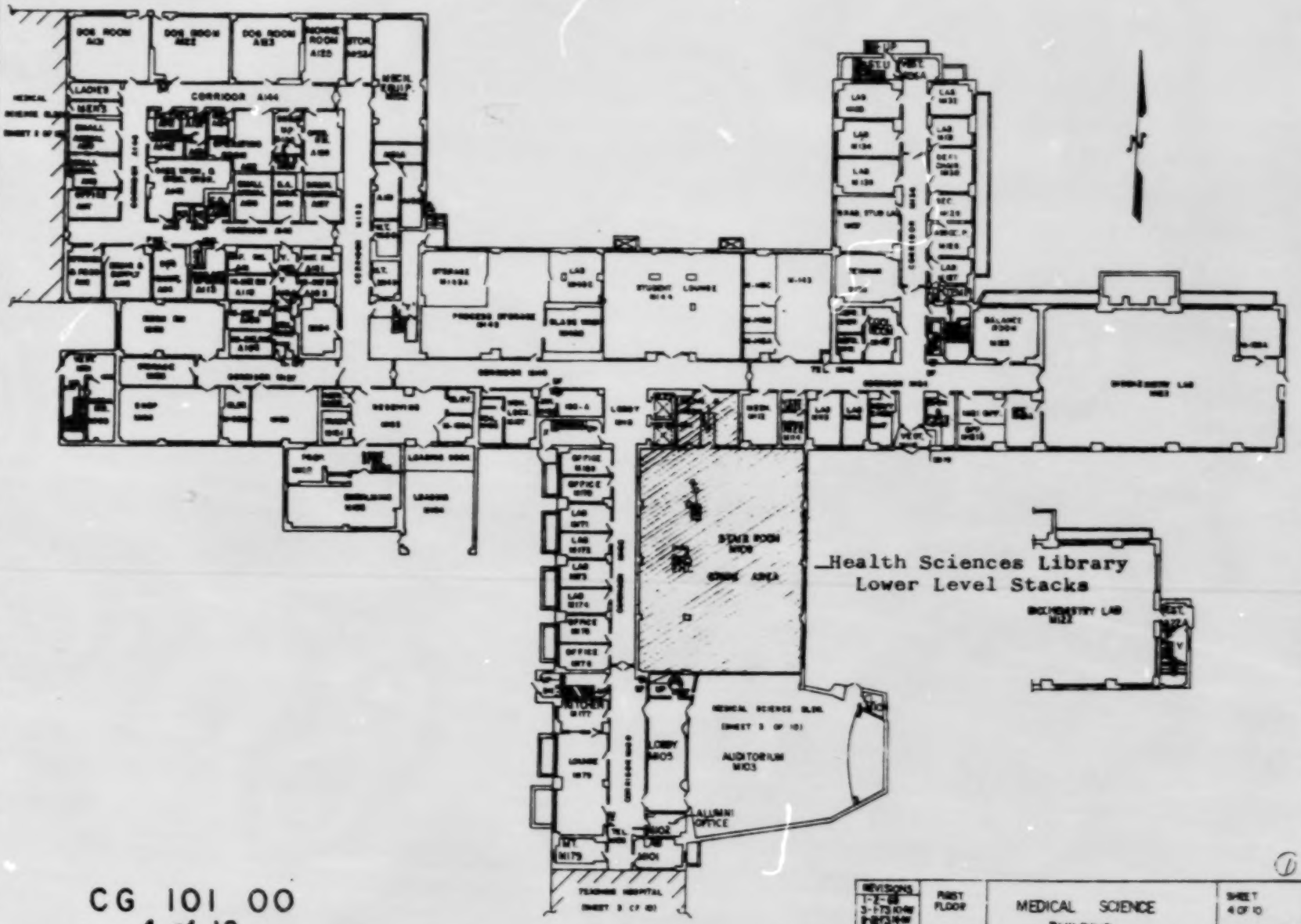
DRAWING SCALE



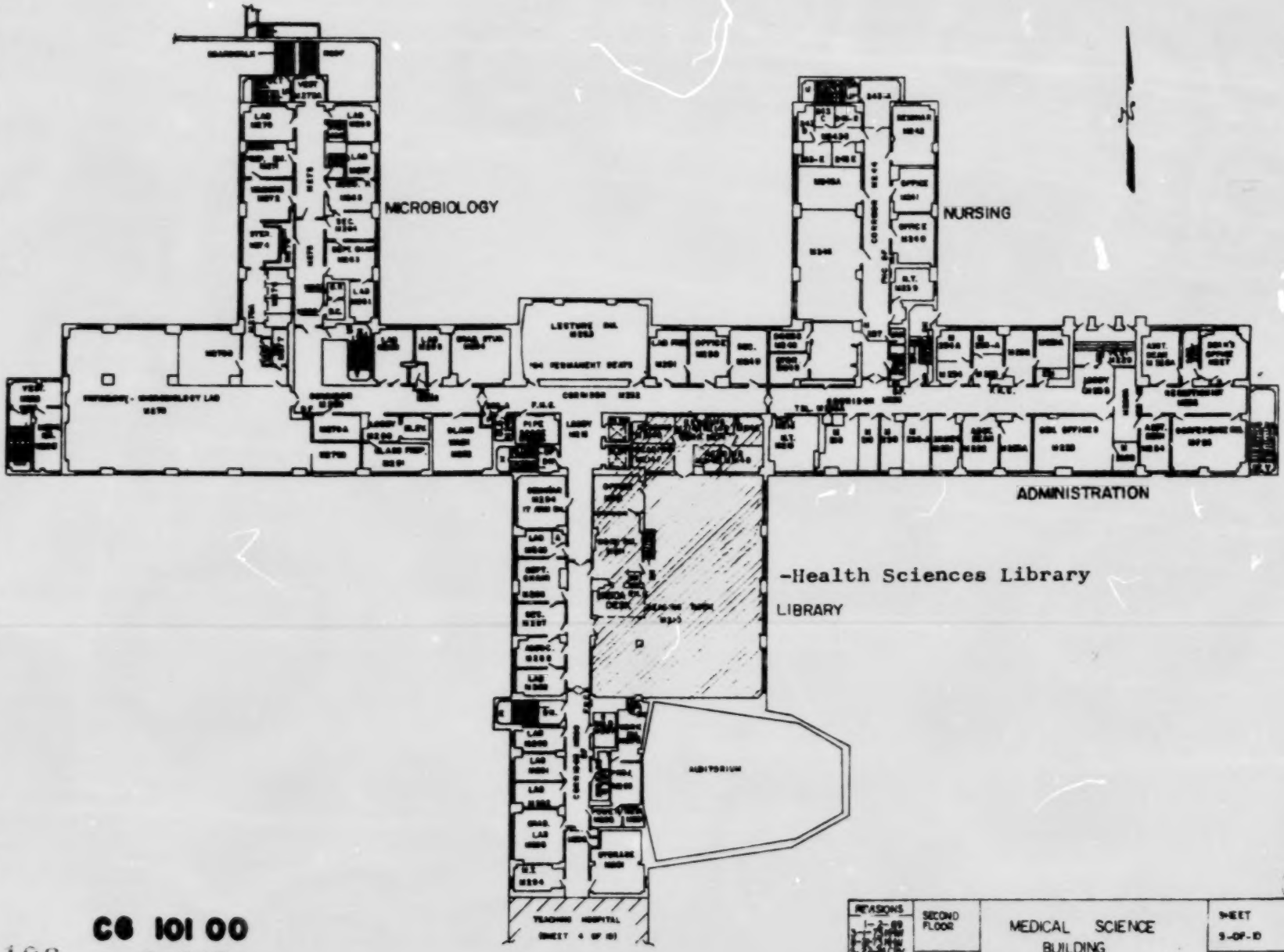
FOURTH FLOOR

ELLIS LIBRARY

4

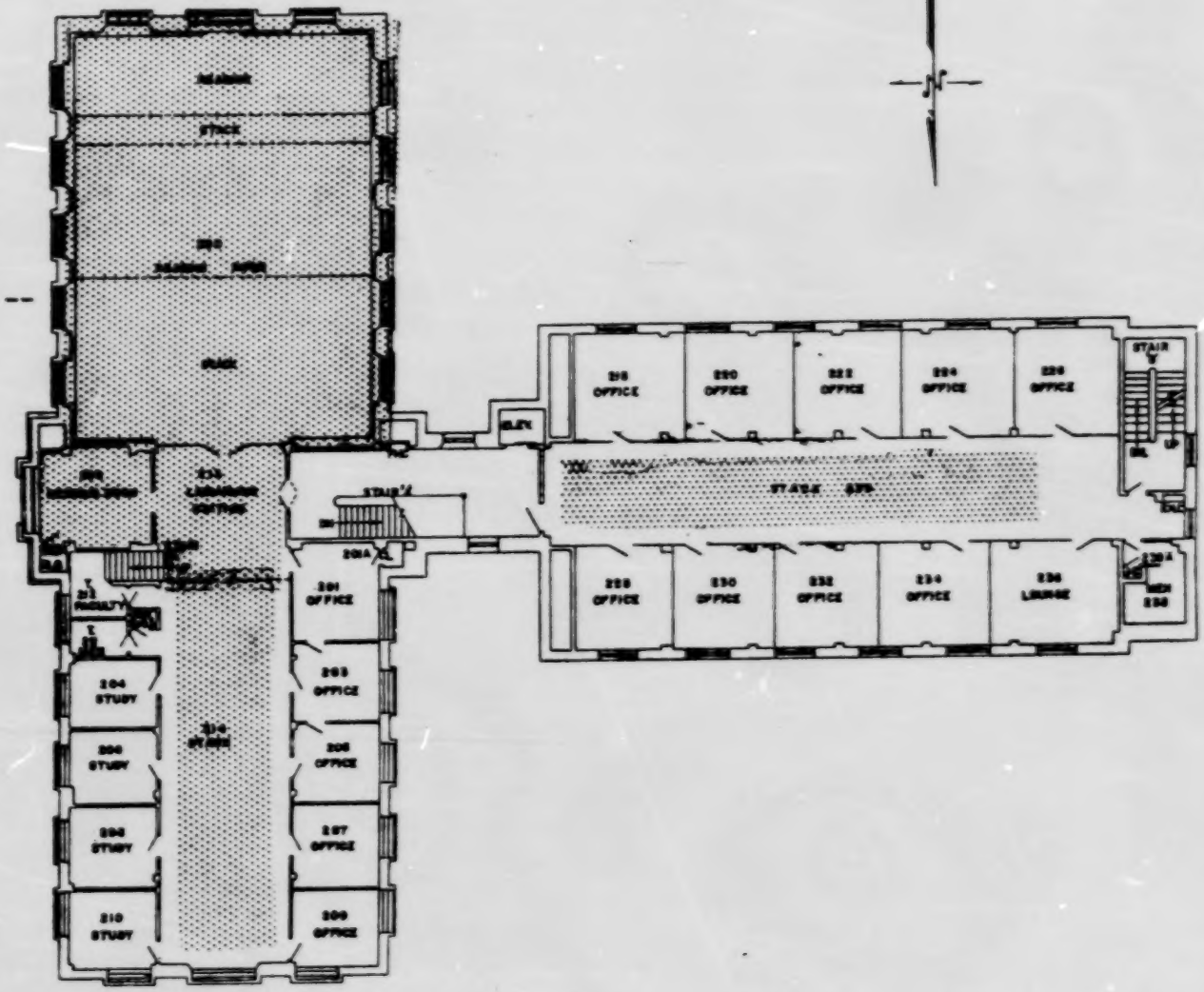


CG 101 00
4 of 10



REVISIONS	SECOND FLOOR	MEDICAL SCIENCE BUILDING	SHEET 9-OF-10
	DATE 10-30-56	DEPARTMENT OF PHYSICAL PLANT UNIVERSITY OF MISSOURI COLUMBIA, MO.	SCALE 1/8"=1 FOOT

CS 101 00
8 of 10

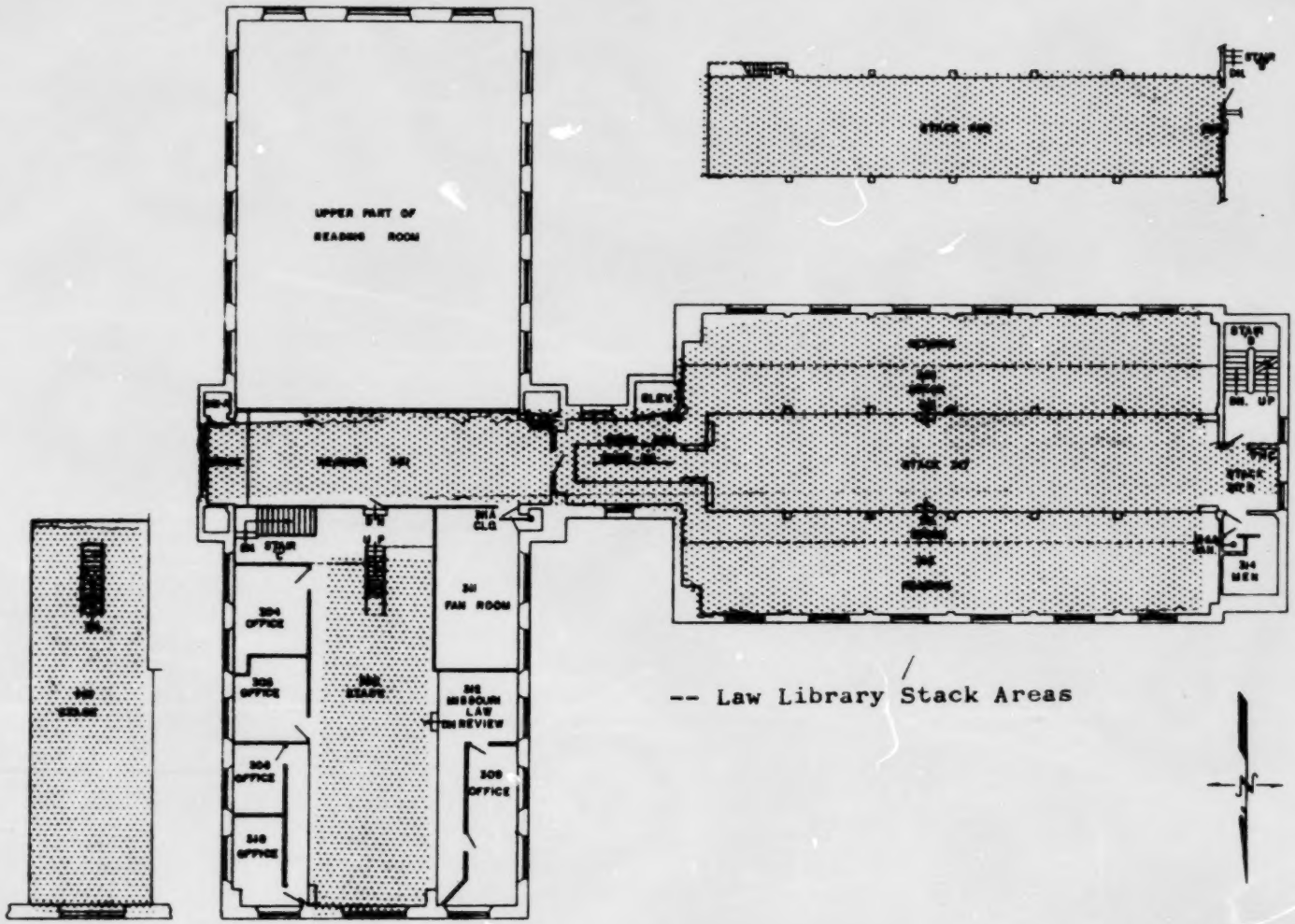


RC 066 00
4 of 5

REVISIONS DATE	SECOND FLOOR	TATE HALL	SHEET
	DATE		SCALE

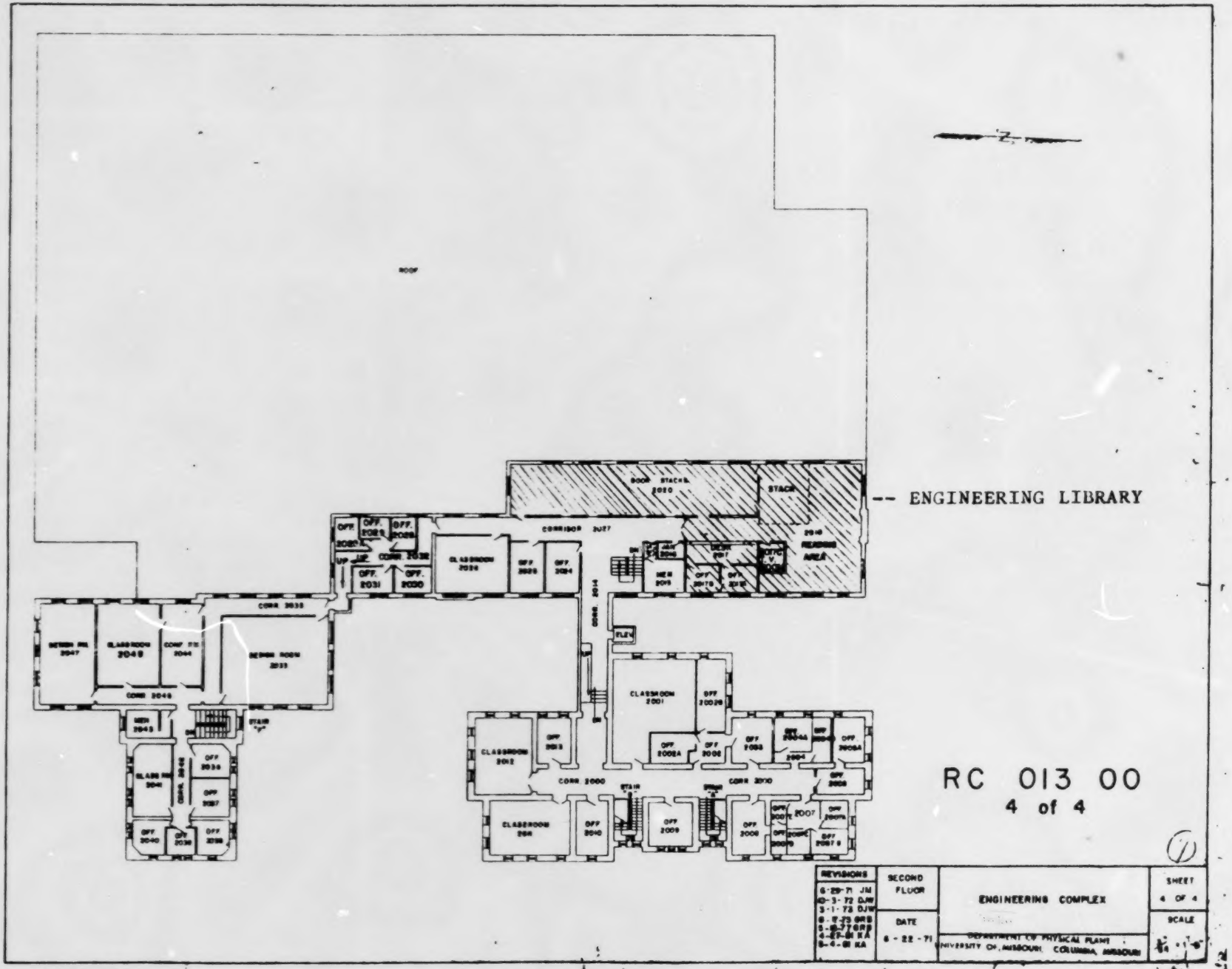
129

129



RC 066 00
5 of 5

REVISIONS			
DATE	THIRD FLOOR	TATE HALL	SHEET
1-18-66			
1-18-71 LB			
5-[illegible]			
[illegible]			
[illegible]			
[illegible]			
2-[illegible]			
2-[illegible]			
2-[

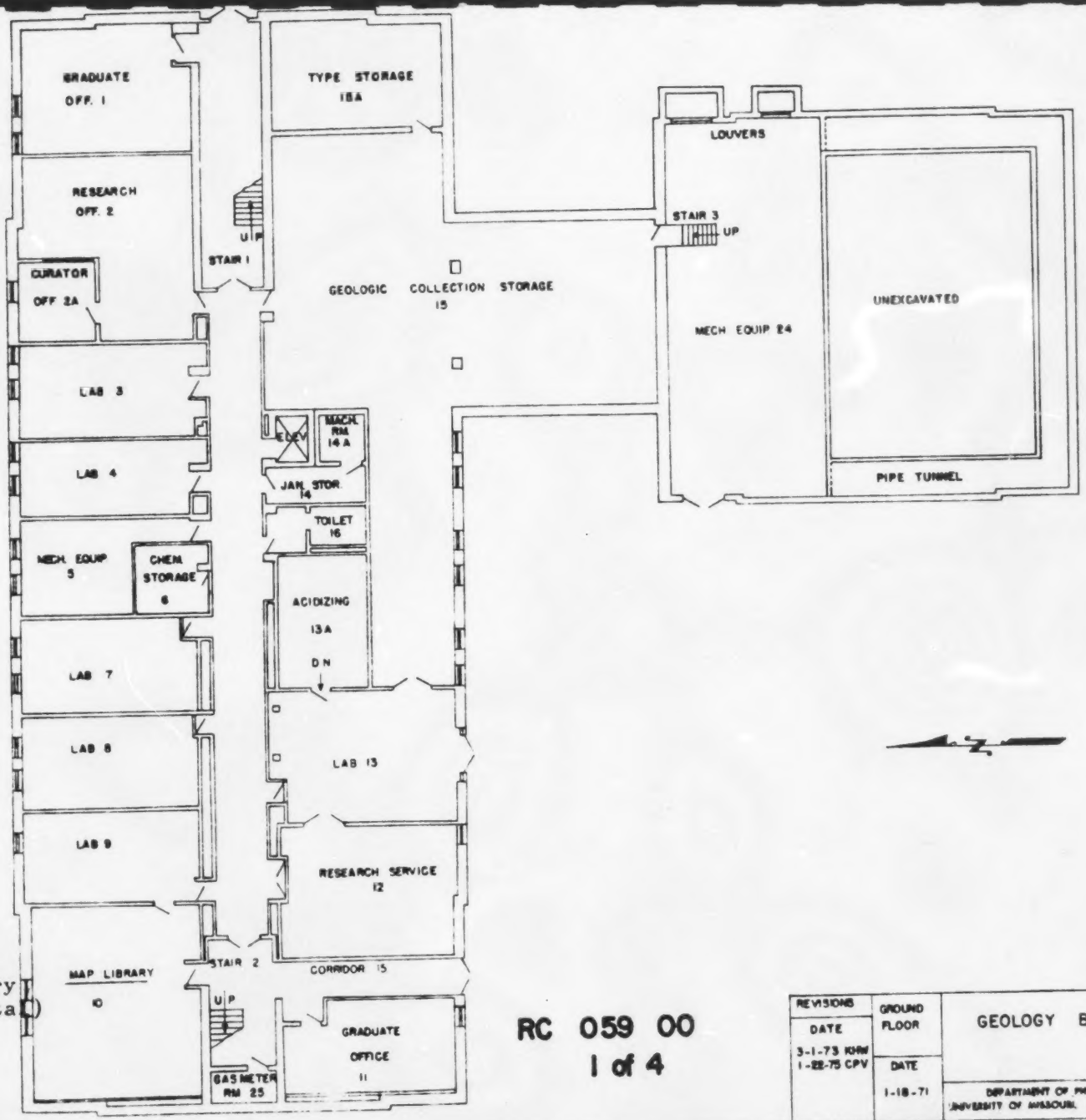


RC 013 00
4 of 4

119

132

133



Geology
Map Library
(departmental)

RC 059 00
1 of 4

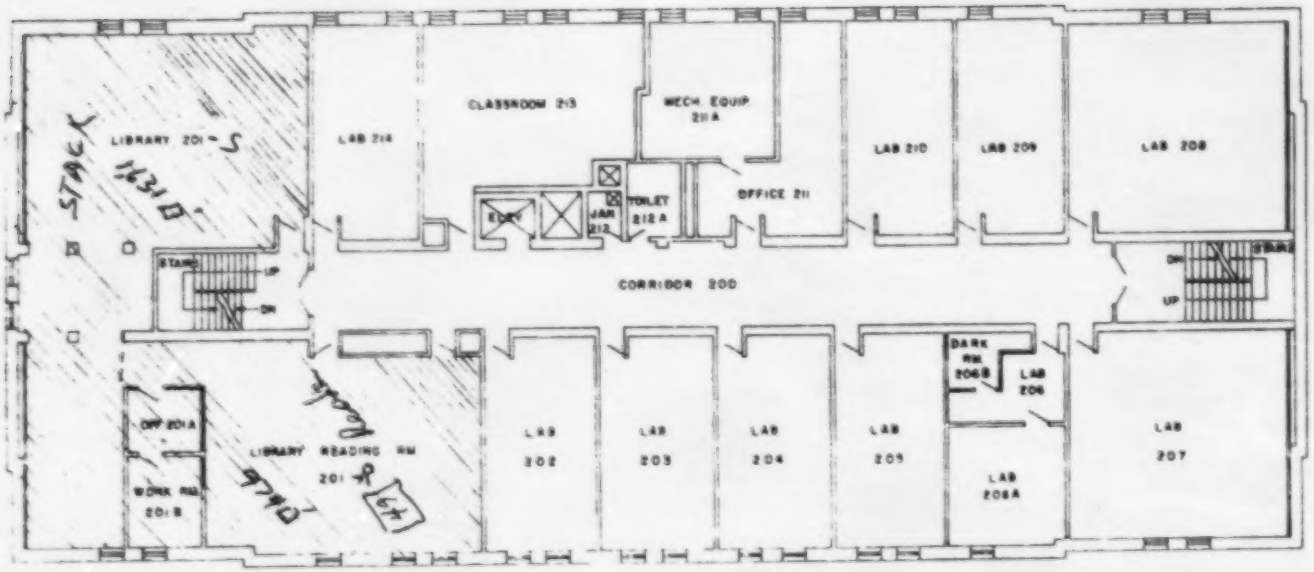
REVISIONS	GROUND FLOOR	GEOLOGY BUILDING	SHEET
DATE			1 of 4
3-1-73 KHW 1-22-75 CPV	DATE		SCALE
	1-18-71	DEPARTMENT OF PHYSICAL PLANT UNIVERSITY OF MISSOURI, COLUMBIA	3/32"=1'

120

131

135

27



GEOLOGY LIBRARY

RC 059 00
3 of 4

REVISIONS	SECOND FLOOR	GEOLOGY BUILDING	SCALE
3-1-75 KHW	DATE 1-18-71	DEPARTMENT OF PHYSICAL PLANT UNIVERSITY OF MISSOURI, COLUMBIA, MISSOURI	SHEET 3 OF 4

Journalism Library
(lower level)

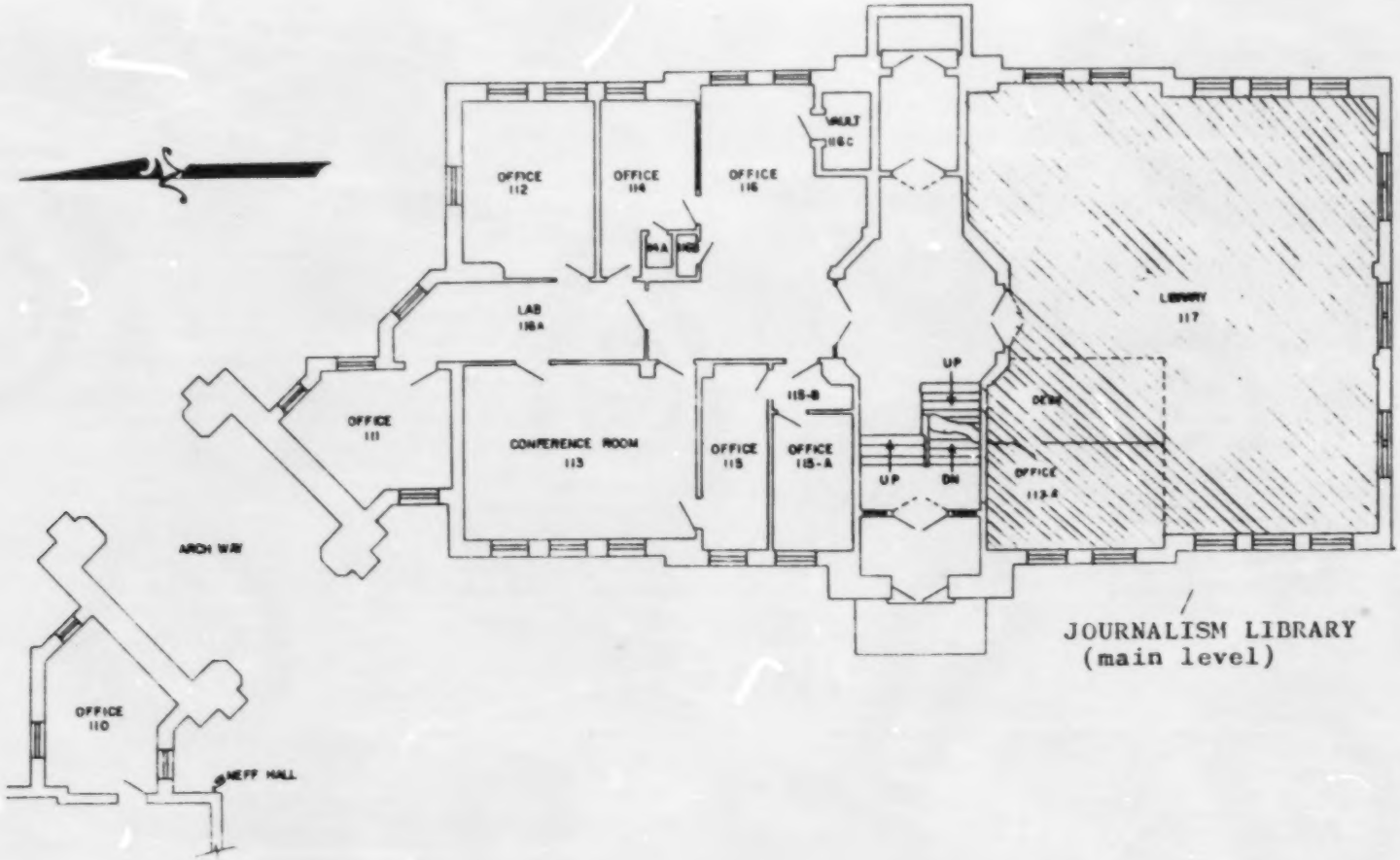
RC 025 00
1 of 3

REVISIONS	BASEMENT FLOOR	WILLIAMS HALL	SHEET 1-OF-3
1-15-71 LLB 3-4-75 HHM 10-28-76 CPV 1-25-78 CPV 2-6-79 CBB 5-8-79 CBB 5-8-80 EKF 12-10-80 HH	DATE 12-12-69		SCALE 1/8"-1'-0"

122

123

10.



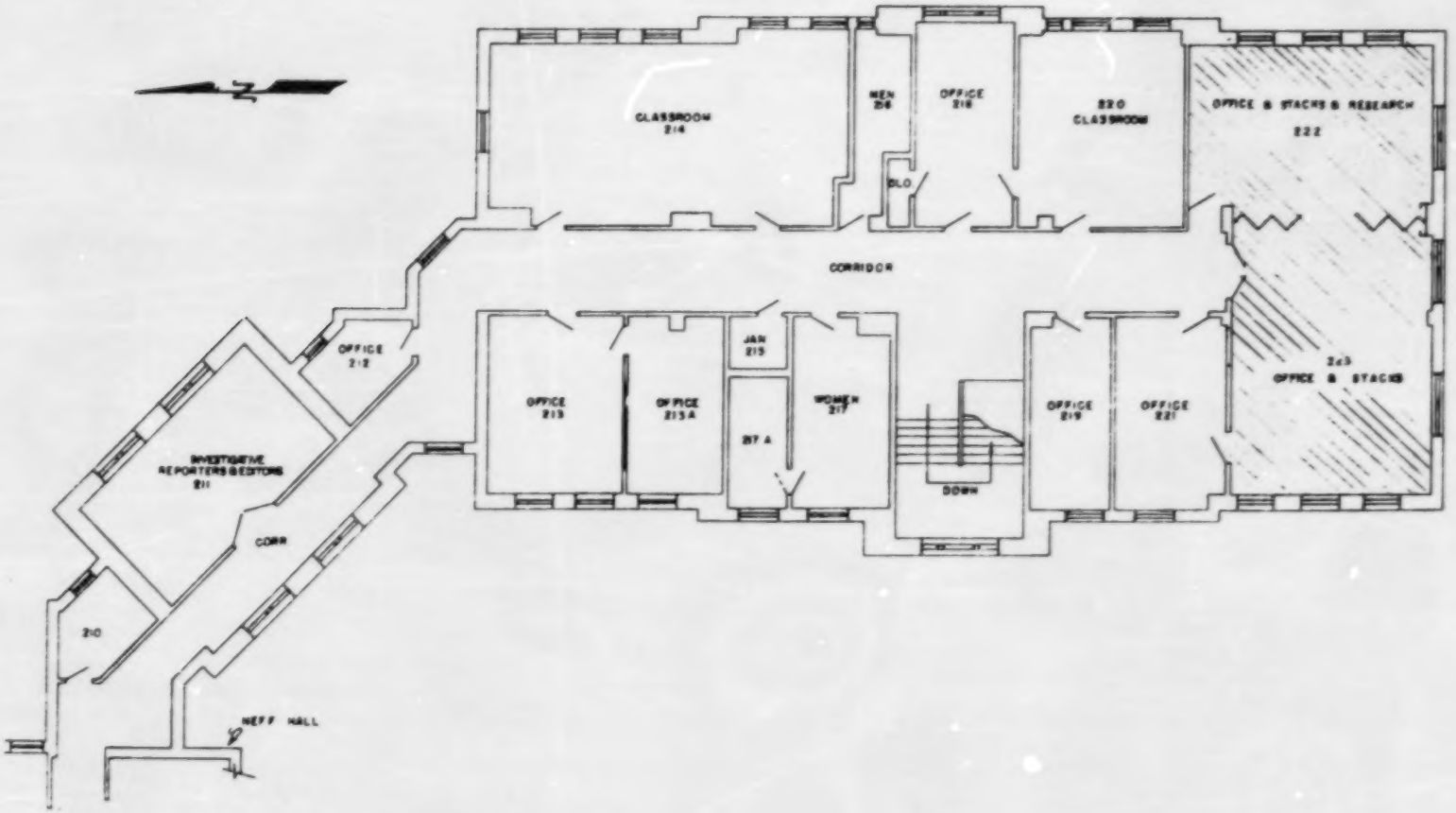
JOURNALISM LIBRARY
(main level)

RC 025 00
2 of 3

REVISIONS			
1-15-71 LLB 2-24-76 DJW 7-26-76 CV 8-16-76 GB 5-12-77 GB 3-8-80 CDS 10-21-80 RA	1ST FLOOR	WILLIAMS HALL	SHEET 2-OF-3
	DATE 12-15-69		SCALE 1/8"=1'0"

140

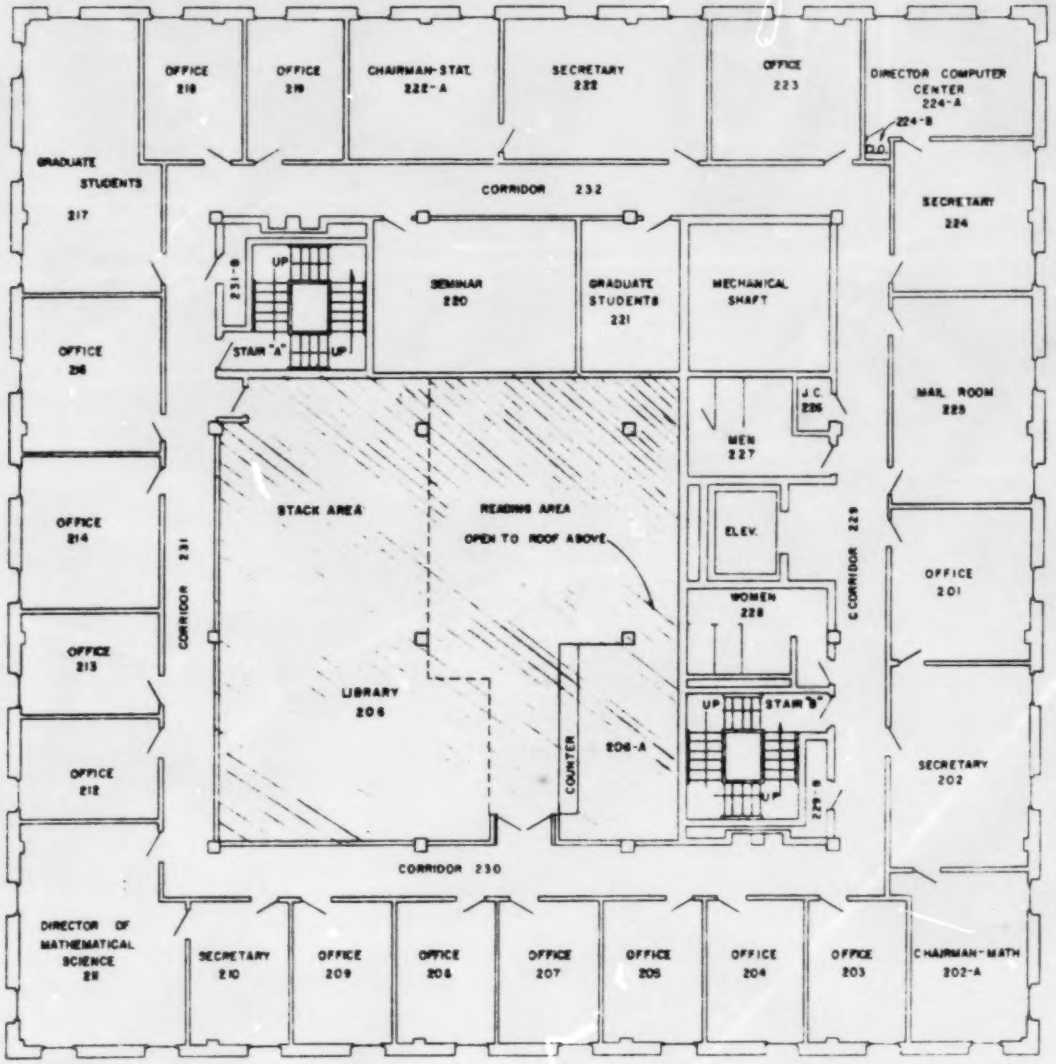
141



RC 025 00
3 of 3

(1)

REVISIONS	2 ND FLOOR	WILLIAMS HALL	SHEET 3-OF-3
3-1-73 S/W 1-23-75 S/W 3-8-80 S/W	DATE 12-15-80	DEPARTMENT OF PHYSICAL PLANT UNIVERSITY OF MISSOURI COLUMBIA, MISSOURI	SCALE 1/8"=1'-0"



MATHEMATICAL SCIENCES LIBRARY

(4)

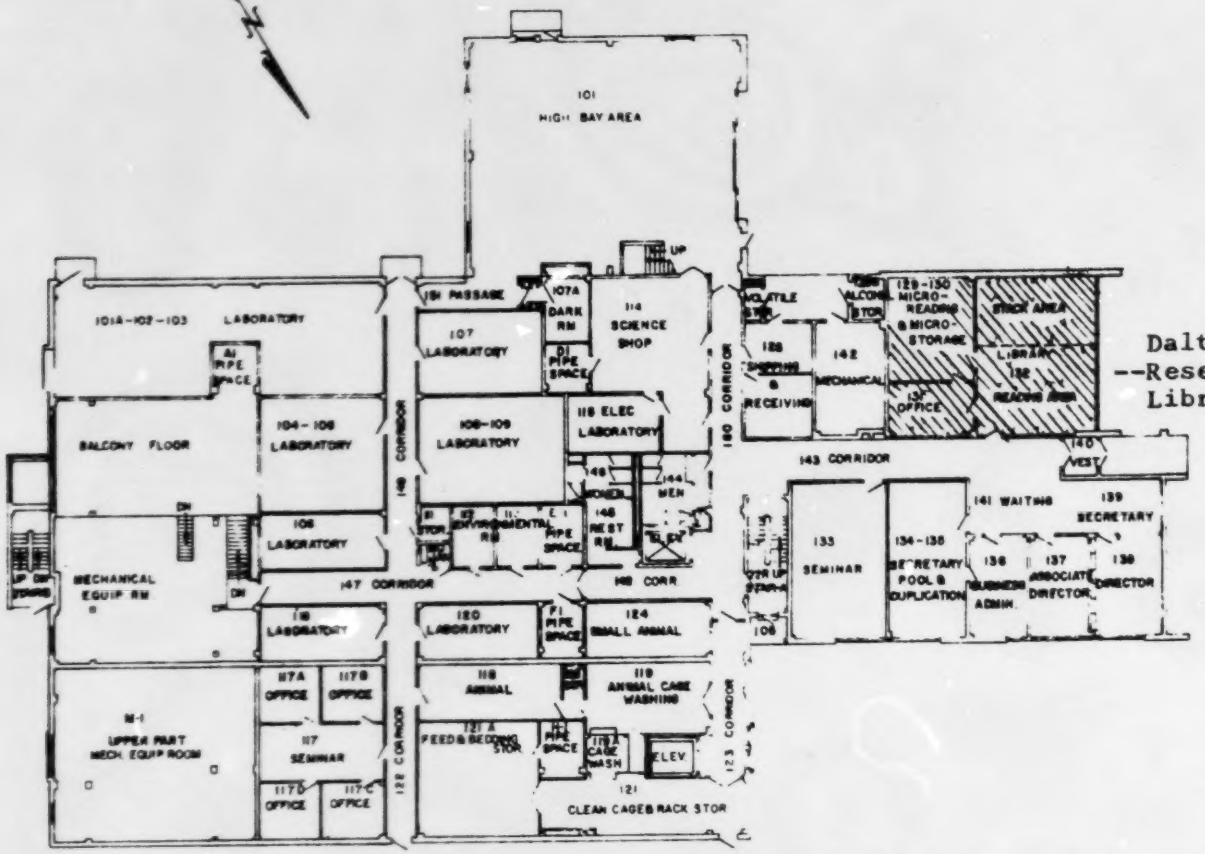
CG 062 00
3 of 4

111

REVISIONS	SECOND FLOOR	MATHEMATICAL SCIENCE CENTER	SHEET 3 OF 4
10-4-72 DJM 5-1-73 KHW 5-12-77 GRB	DATE 2-22-71		SCALE 1/8"-1'-0"

145

125



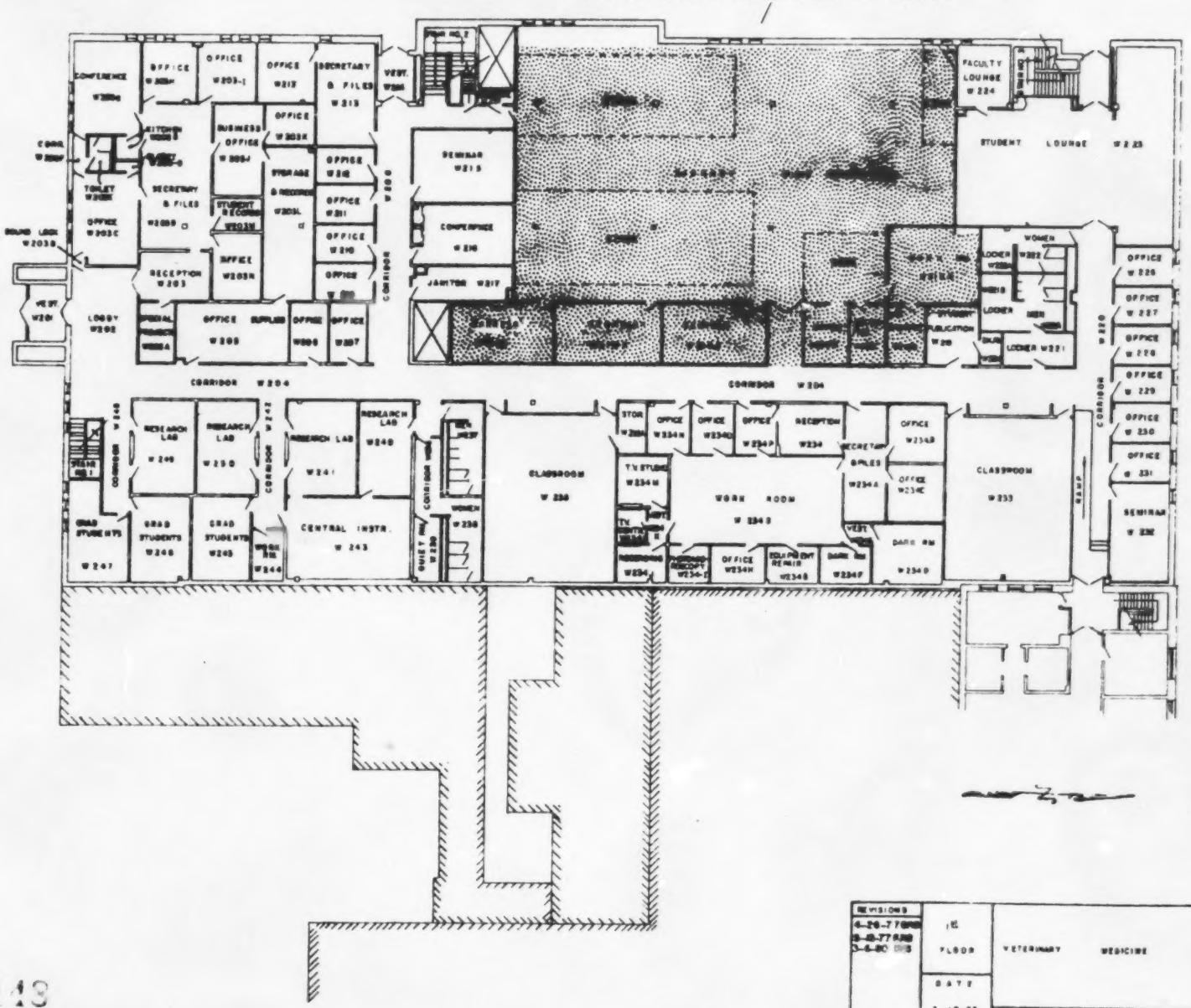
REVISIONS	FIRST FLOOR	DALTON SPACE SCIENCE RESEARCH CENTER	SHEET 2-OF-4
10-14-69 GET 3-1-73 KHW 6-4-75 CPV 9-2-75 GRB 5-12-77 GRB	DATE 6-27-67	DEPARTMENT OF PHYSICAL PLANT UNIVERSITY OF MISSOURI COLUMBIA, MO.	SCALE 1" = 1'-0"

RP 116 00
2 of 4

116

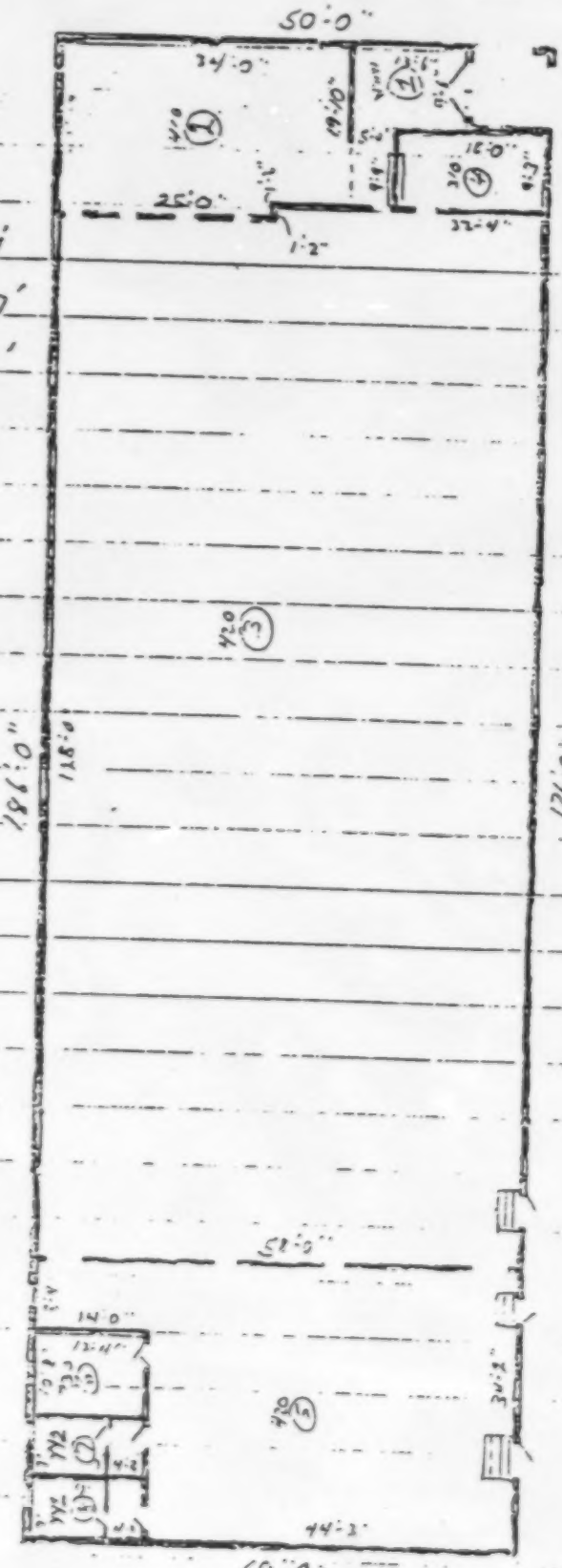
117

VETERINARY MEDICINE LIBRARY



REVISIONS	FLOOR	VETERINARY MEDICINE BLDG.	SCALE
4-26-77 BAB 8-8-77 BAB 3-6-80 BB	DATE 7-10-79	DEPARTMENT OF PHYSICAL PLANT	SHEET 1 OF 1

LIBRARY ANNEX



SCALE 1" = 20'

Gross: 11,060 D'
Net: 10,468 D'
Nasf: 10,105 D'

ROOM	SQ FT NET	NASF
1.	177	0
2.	703	703
3.	7,462	7,462
4.	167	167
5.	1,629	1629
6.	144	144
7.	93	0
8.	93	0
Tot	10,468	10,105

A & P LIBRARY ANNEX

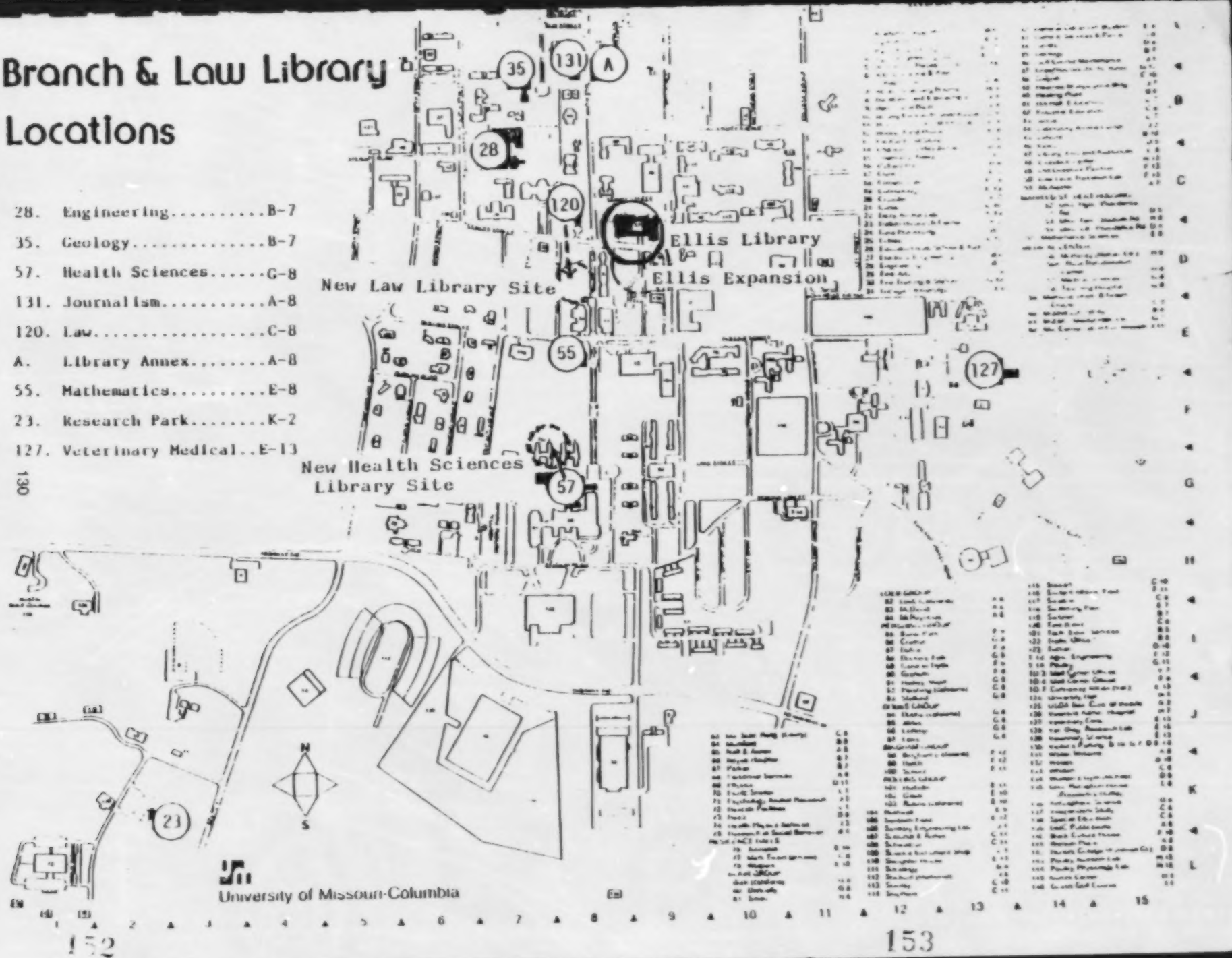
1 of 1

(1)

Libraries of the University of Missouri-Columbia:
LIBRARY EVALUATION AND FACILITIES PROGRAM PLAN

THE SASAKI/MACKEY/MIRA/MARTIN TEAM
December 1981

APPENDIX 4.2

CAMPUS MAP SHOWING EXISTING AND POTENTIAL LIBRARIES

Branch & Law Library Locations